

Running head: PROVIDER TYPE AND PATIENT SATISFACTION

Graduate Management Project

Affects of Provider Type on Patient Satisfaction, Productivity and Cost Efficiency

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Disclaimer

The views expressed in this paper are those of the author and do not reflect the official policy or position of Baylor University, the Department of the Navy, the Department of the Army, the Department of Defense, nor the United States Government.

Statement of Ethical Conduct in Research

The data used in this study were obtained from automated government databases. No personal identifiers were used. The author declares no conflict of interest or financial interest in any of the facilities included in this study.

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Abstract

The purpose of this one year retrospective quantitative study is to determine if the type of provider (physician, nurse practitioner, and physician assistant) influences patient satisfaction and productivity. As the prospective payment system becomes more widely used in the military healthcare system, patient satisfaction and provider productivity will become more important for financial reimbursement. This study is useful to determine the provider types most desired and accepted by military patients, in addition to yielding a satisfactory workload output. Many studies have been conducted in the civilian community; however, few studies address these issues within the military system. 104,013 Army beneficiaries who visited their Primary Care Managers (PCM) from January 2004 to December 2004, were surveyed and their results were used as the sample for this study. Provider efficiency within CONUS Military Treatment Facilities (MTFs) was evaluated using the period of January 2004 to December 2004, with a sample size of 20,421. The alpha level was set at .05 and multiple linear regression and analysis of variance were used to determine the predictive value of the model. The results show that there is a statistically significant positive relationship between nurse practitioners and patient satisfaction. The analysis of variance showed that physician assistants have a lower cost per visit ratio, and there is no difference between provider types and relative value units.

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Introduction

The purpose of this one year retrospective quantitative study is to determine if the type of provider, defined as a physician, a nurse practitioner, or a physician assistant, influences patient satisfaction and if there is a difference in their productivity and cost efficiency. For the purpose of this study productivity is operationally defined as encounters per month, relative value units per month and cost efficiency as cost per visit ratio. In the next four years, prospective payment will be phased-in. The prospective payment system allocates money to the Military Treat Facilities (MTFs) based on business goals and productivity (Winkenwerder, 2004). As the prospective payment system becomes more widely used in the military, patient satisfaction, provider productivity, and cost efficiency will become more important for financial reimbursement.

Problem Statement

The budget for military treatment facilities (MTFs) has been historically based on the previous year's budget, plus inflation. With the implementation of the prospective payment system, the MTF Commanders will need to examine ways to demonstrate effectiveness of care and cost efficiency to compete with purchased care alternatives. Many studies have been published comparing physicians and nurse practitioners; however, few studies have addressed the military health care system. Operational commitments and practice patterns make the military health care system unique; thus, it is difficult to generalize the results from studies conducted at civilian sites to military treatment facilities. The conditions that prompted this study are changes in the MTF reimbursement

system, rising costs of health care, and the limited studies that are generalizable to military healthcare. The results of this study will assist decision makers in identifying human resources that increase productivity and patient satisfaction.

Research Question

Is there a relationship between provider type and patient satisfaction? Is there a difference between provider type and productivity and cost efficiency.

Review of the Literature

The literature review will be divided into four sections. Section I provides the theoretical background. Section II discusses the financial impact and factors influencing the cost of healthcare. Section III discusses the different types of primary care providers and their unique educational preparation which may contribute to differences in practice patterns and patient satisfaction outcomes. Section IV deals with patient satisfaction.

Section I Theoretical Background

Donabedian (1966) described quality health care with the following constructs: structures, processes, and outcomes. These constructs can be further defined with variables that can be objectively measured. Structures refer to the relatively fixed characteristics of health care organization and those who staff it. Structures can include educational training and certification of those who provide care. Staffing levels, building organization, and equipment are considered fixed structures that may be changed, but not rapidly. Having adequate structures in place contributes to quality; however, it does not guarantee quality (Donabedian, 1993).

Ransom, Maulik and Nash (2005) describe processes as what takes place during the delivery of care. This includes appropriateness of actions and skill. Excellent processes do not guarantee good outcomes and good outcomes do not indicate good processes. Some patients get well or recover despite inappropriate processes and other patients may have poor outcomes after receiving the best care. Even with this apparent contradiction, good processes most often result in good outcomes (Ransom et al, 2005). According to Perrin (2002), understanding how processes and structures relate to an outcome is valuable because processes and structures can be manipulated and controlled. Therefore, by carefully studying patient satisfaction and productivity, potential improvements in key processes and structures may be achieved. In order for a public health system to achieve its mission, appropriate structures and processes must be in place (Handler, Issel & Turnock, 2001)

Section II Financial Concepts

Provider productivity and costs have been addressed by civilian managed care organizations (MCOs) from both supply and demand side economics (Kongstvedt, 2002). The civilian healthcare system has many differences from the military system in terms of economics and cost control. In the civilian sector, prospective payment systems pass a certain amount of financial risk to providers and gives financial incentives to providers who are cost efficient. The military healthcare system has no way to pass risk directly to providers or give equivalent productivity incentives to providers. The prospective payment system that is being implemented in the military health system partially addresses this by giving

the MTF more funding for higher productivity. These funds may help the organization; however, they do not give the providers direct financial incentives to work longer and take on more patients like the civilian model allows. In order to curb demand for healthcare, civilian MCOs can decrease benefits, increase co-pays, and increase deductibles. Military healthcare benefits, copays, and deductibles are controlled by congressional legislation; therefore, MTF commanders have few demand-side options to curb utilization (Code of Federal Regulations, Title 32, Part 199). In 2002, Congress enacted a law in the military healthcare system that enabled women to choose civilian maternity care providers without a non-availability statement or prior approval from an MTF. This provided more choice for the maternity patient and put the MTF in competition with the civilian healthcare system for obstetric services (National Defense Authorization Act for Fiscal Year 2002). In the civilian sector, human resources can be optimized for provider productivity and cost efficiency. In the military healthcare system, human resources are often determined by operational commitments and not provider productivity. With the limitations on supply-side cost controls, demand-side utilization management, and human resources, MTF Commanders will need to optimize available resources and develop innovative strategies to maintain funding in a prospective payment environment.

Provider productivity and cost efficiency can be measured in multiple ways which include: simple patient visit counts, Relative Value Units (RVUs), and resource utilization. Simple visit counts entail counting the number of patient encounters a provider sees in a day. It is a very easy method of workload

measurement, but it does not account for differing levels of illness and complications that a patient presents with. RVUs are standardized clinical workload values based on Current Procedural Terminology (CPT) codes (Glass & Anderson, 2002). More intensive services receive a higher value than low intensity services. This model is more accurate at measuring workload than counting the number of patient encounters, but it has some limitations. Coleman, Moran, Serfilippi, Mulinski, Rosenthal, Gordon, and Mogielnicki (2003) noted that RVUs are higher for procedures than for cognitive and decision making skills, which makes procedure-oriented providers seem more productive than providers who manage complex patients. Another significant weakness to RVUs is coding compliance. If visits are not coded accurately, the workload will be artificially inflated or deflated. Glass and Anderson (2002) recommend using more than one measurement of provider workload.

Resource utilization is another method of measuring workload in terms of costs. One way to define the cost to the MTF of providing healthcare is according to fixed and variable costs. Fixed costs include building maintenance, utilities, telephone, durable medical equipment, and custodial costs. Fixed costs remain even if no patients are seen. Variable costs are costs that change according to the volume of patients seen and the resources consumed. Resources include such things as prescriptions, lab tests, radiological studies, and consumable supplies. Variable costs increase as the volume of patients increases (Zellman, 2004). Providers can control the variable cost of healthcare

by ordering tests, making referrals, prescribing medications and hospitalizing patients.

The cost of health care is driven partially by the practice patterns of providers. This variation in practice may be related to where the provider was trained, patient expectations, and practice style. In an article by Nagurney, Braham, and Reader (1979), clinical decisions by providers accounted for 55% of total health care costs. Providers, who order more tests and prescribe more medications than their peers, utilize more resources per patient. A high resource utilization rate leads to a higher cost for the system. Cost per visit ratio is a useful measure of resource utilization. It is calculated by dividing the total variable cost for period of time by the total patient encounters during that same period. This ratio show how efficient the providers are at utilizing resources and may be affected by how a provider was trained.

Section III Provider Differences

Physicians, physician assistants, and nurse practitioners are trained differently and have a different focus on patient care. Physicians focus primarily on curative medicine (Alpert, Fjone & Condela, 2002). Nurse practitioners emphasize patient education, disease prevention, and health promotion (Sherwood, Brown & Fay & Wardell, 2002). Nurse practitioners in primary care go beyond medical care to include roles as a patient educator, motivator, administrator, and advocate (Alpert, Fjone & Condela, 2002). Physician assistants are trained in the medical model similar to physician but with shorter duration and limited scope (American Academy of Physician Assistants, 2006).

The training of nurse practitioners varies and there are currently three paths to becoming a nurse practitioner. The first path is through a master's degree in nursing in the clinical area of emphasis such as family practice. The candidate must first possess a bachelor's degree in nursing and at least one year of nursing experience prior to applying for nurse practitioner training with total training time of seven to eight years. The second path is to skip over the master's degree and obtain a clinical doctorate in nursing with a total training time of eight to nine years. The nursing doctorate provides additional training in research and teaching methods. The third path is to obtain a post-master's certification. This path is used when nurse already possesses a master's in another nursing specialty and wants to broaden skills and abilities. Nurse practitioner's have an independent license and in most states can prescribe medications according with the nurse practice acts of each state (Apert et al. 2002).

The training of a physician differs from a nurse practitioner. In order to apply to medical school, medical students first must obtain a bachelor's degree with a significant emphasis in science. Students may then choose between two types of medical schools: allopathic or osteopathic. The allopathic medical school emphasizes curative medicine and surgery. The osteopathic medical schools focus on primary care and holistic measures including spinal manipulation treatments. Upon completion of their chosen path both allopathic and osteopathic physicians are licensed by their state and may become board certified in any medical specialty (Princeton Review, 2006). Medical school is

four years in length followed by a one year internship and two to five year residency with a total training time of 11-15 years depending upon specialty (American Medical Association, 2005).

Physician assistants follow a very similar curriculum as physicians, but the training time is much shorter. Physician Assistants are trained along with medical students at medical schools and may even take some of the same courses as the medical students. Physician assistants graduate with a bachelor's degree and may apply for certification with a training time of four years. Physician assistants work under a supervising physician's license and often follow the practice pattern of his or her supervisor (American Academy of Physician Assistants, 2006).

Section IV Patient Satisfaction

Patient satisfaction is a psychological outcome that is frequently measured because of its significance to organizations. Patient satisfaction is important because dissatisfied customers may leave the military primary care system in favor of the more expensive purchased care system. In addition, dissatisfied customers may tell friends and family of their dissatisfaction and give a negative perception of an organization. In a study by Horrocks, Anderson, and Salisbury (2002), a meta-analysis of 34 studies found that patients were more satisfied with nurse practitioners than physicians. The higher satisfaction rate may be due to differences in training and more time spent with patients (Horrocks et al., 2002). In a study by Kinnersley, Parry, Clement, Archard, Turton, Stainthorpe, Fraser, Butler, and Rogers (2000), nurse practitioners had higher satisfaction scores,

equivalent patient health outcomes, and spent more time with patients than physicians. Although nurse practitioner's performed well when compared to physicians, the longer time spent with patients can reduce productivity and thereby reduce cost effectiveness (Venning, Durie, Roland, Roberts, & Leese, 2000). A large meta-analysis study by Laurant, Hermans, Braspenning, Grol, and Sibbald (2005), in which nurse practitioners were compared with physicians in primary care setting, found no significant differences in patient outcomes but a higher patient satisfaction with nurse practitioners.

Purpose

The purpose of this one year retrospective quantitative study is to determine if the type of provider influences patient satisfaction and if there are differences in provider productivity and cost efficiency. Patient satisfaction with the provider is operationally defined as the overall satisfaction score on a 5-point scale with one being completely disagree and five being completely agree. Productivity is operationally defined as the number of patients seen per month, relative value units of patients seen, and cost efficiency is operationally defined as cost per visit ratio.

Hypotheses

Model 1 Patient Satisfaction

H₀—There is no relationship between provider type and patient satisfaction levels

H_a – Patient satisfaction is related to provider type

Model 2 Provider Productivity by RVUs

H0 – There is no difference between provider type and RVU productivity

Ha – There is a difference in provider type and RVU productivity

Model 3 Provider Productivity by Encounters

H0 – There is no difference between provider type and number of encounters

Ha – There is a difference between provider type and number of encounters

Model 4 Provider Cost Efficiency

H0 – There is no difference between provider type and cost per visit ratio

Ha—There is a difference between provider type and cost per visit ratio

Equations

Model 1 Patient Satisfaction

Overall patient satisfaction = provider type + facility type + seen by PCM + patient age group + gender + provider rank + month + civilian provider + patient category

Model 2 Productivity by RVUs

RVUs = provider type + calendar month

Model 3 Productivity by number of encounters

Encounters = provider type + calendar month

Model 4 Productivity by cost per visit ratio

Cost/Visit ratio= provider type + calendar month

Data Sources

Cases were taken from the M2 datamart for productivity measures for primary care providers for calendar year 2004. The cases for patient satisfaction were taken from the Provider Level Patient Satisfaction Survey (PLPSS) maintained in a database at Army Medical Department (AMEDD) from January 2004 to December 2004. The PLPSS is used by the military to assess beneficiary satisfaction with a provider, see Appendix A. For the purpose of this study only first eight questions, page 1 of PLPSS, were used. The PLPSS was initiated by the AMEDD leadership in 2002 to give providers and MTF leadership timely feedback from patients. Physicians, nurse practitioners and physician assistants who have at least 1000 outpatient encounters per year are provided with patient satisfaction feedback. Patients are surveyed within 48 hours of a visit using a 20 question form. A five point scale was used for questions 1 through 7 was 1 equals completely disagree and 5 equals completely agree. Question number 8 was yes/no. Not all patients filled out questions 9 through 20; therefore, only data from the first eight questions were used. Patients are chosen so that a target of 200 surveys is completed annually per provider (PLPSS, 2006).

The M2 datamart collects data from data repositories throughout the Department of Defense (DoD) and includes purchased care and direct care. The data from the M2 datamart are derived from multiple redundant data sources and are prescreened by the database administrators. Inconsistent or extraordinary numbers are questioned and corrected ensuring reliability of the data.

Ethical Considerations

The data was extracted from existing government data sources and no personal identifiers were used in this study.

Research Methods and Procedures

The methods and procedures for the patient satisfaction component of this study were replicated from a previous study by Mangelsdorff and Finstuen (2005), with some refinements. The variables fall into three categories: individual patient variables (age group, status, and gender), situational variables (MTF size, and provider rank, month) and beliefs about care (time spent, listened, understood, courtesy, explained, helped with problem) as described by Mangelsdorff and Finstuen (2005). The refinements included the addition of provider type and provider rank and exclusion of beliefs about care variables. The TRICARE enrollment status and region where the patient was enrolled were not used because these variables were not captured by the database. Only Army beneficiaries were included in the survey from January 2004 to December 2005.

The unit of analysis is provider type: physician, nurse practitioner, and physician assistant. The patient satisfaction survey results originally contained 319,872 cases; however, the survey did not distinguish between primary care providers and specialists. First, the cases were filtered by appointment type and all emergency room appointments were eliminated. Although nurse practitioners and physician assistants work in emergency rooms, the focus of this study was on primary care rendered in the outpatient clinic. Second, the cases were filtered

by the provider specialty and provider class variables; see Appendix B and Appendix C for description of these variables. In cases where the provider was a specialist, the case was filtered out. In some of the cases, the provider class variable had the value of "Provider," which could have referred to all types of providers. When this occurred, the provider specialty variable was used to determine the provider type. After eliminating all specialty providers, the remaining cases were 105,211. Of those cases, 304 were removed due to vague or incomplete provider specialty description and 894 cases were removed due to missing data bringing the final case count to 104,013. The provider class and provider specialty variables were recoded to three mutually exclusive binary variables of 1 for present and 0 for absent, see Appendix D for Statistical Program for Social Sciences (SPSS) syntax used to filter provider type variables. Patient category was defined as active duty, active duty family members, retirees, and other. The raw data contained 225 different patient categories, see Appendix E. These were re-coded into one of four patient categories for analysis.

The unit of analysis for provider productivity measures and cost efficiency is provider type. The following variables from M2 were used: fiscal year 2004, provider type (Limited to Family Practice physicians, Family Nurse Practitioners, and Physician Assistants), calendar month, Simple RVUs, Total Encounters, and cost per visit ratio, which is variable cost divided by total encounters. Business Objects was used to extract 34,335 cases from M2 in the direct care (i.e., MTF) professional encounters table. The treatment facilities were limited to those in

the continental United States. Only countable visits for primary care clinics with MERPS code BGA and BHA were included. Inpatient visits were excluded. The providers were limited to family practice physicians (coded 001), physician assistants (coded 901), and family nurse practitioners (coded 604), see Appendix F for query visual. In order to prevent the averages from being skewed by part-time providers, cases were limited to full-time providers. Full-time was operationally defined as greater than 100 encounters per month. The assumption being that a full-time provider will average five or more encounters per day. After filtering out the cases with less than 100 encounters per month, the final case count was 20,421.

The productivity and cost efficiency measures were divided into three models. Each model had benefits and limitations. By including more than one measure, the researcher have a more accurate description of productivity (Glass,2005). Calendar month was included to determine if there were seasonal differences. The first model used number of encounters as the dependent variable and provider type and calendar month as the independent variables. Encounters were operationally defined as face to face clinic visits with a provider that were entered into a MTF information system and coded using CPT and ICD9 codes. Telephone consults and inpatient visits were excluded. The second model used RVUs as the independent variable. The third model used cost per visit ratio. This simple ratio can be used with other measures of productivity to give an indication of which providers are most cost effective in use of resources (Vincent, 2002). Cost per visit ratio is derived by dividing the variable cost of

production by total number of patient visits (Vincent, 2002). The M2 data dictionary (M2, 2006) defines the variable cost as MTF wide average based on Ambulatory Patient Groups (APG) that includes supply and ancillary costs. This cost varies from encounter to encounter.

The analyses used for Model 1 were descriptive statistics and multiple linear regression. Multiple linear regression was chosen to determine if the independent variables were predictive of the dependent variable, overall patient satisfaction. Model 1 was subdivided by following groups: age, gender, MTF type, provider rank, provider type and a comparative analysis was done using the general linear model. The descriptive statistics for Model 2-4 are summarized in Table 2. The general linear model was used for all three of these models to find if there was a difference in provider type and the dependent variables.

Results

The findings will be presented as follows: descriptive statistics for each model, graphs to visually show each model, and then inferential statistics for each model. Table I summarizes the descriptive statistics for the patient satisfaction variables with an alpha level of .05 used for all statistical tests. The overall patient satisfaction, question number 7 on the PLSS form, average was 4.54 with a standard deviation of .986. The age group with the largest number of cases was 45-64 year of age with 27,323 cases. The scores were slightly above the overall mean for the 17 and under age group and declined to less than the over mean for age 18 thru 24. The standard deviation for this age group was greater than all other groups. From ages 45 to 64 the mean satisfaction score

was greater than the overall average. The age group of 65 or greater had the highest mean score of 4.83 and least variation with a standard deviation of .603, which indicates the over 65 patients are consistently more satisfied with the services they receive.

Table 1
Descriptive Statistics: Demographic Variables Predictive of Patient Satisfaction

Variable	No	%	Patient Satisfaction	
			Mean	S.D.
Overall Patient Satisfaction	104,013	100.00	4.54	0.986
Age Group				
0-17	16,175	15.6	4.56	0.969
18-24	13,543	13.0	4.33	1.156
25-34	17,701	17.0	4.38	1.135
35-44	19,905	19.1	4.51	0.996
45-64	27,323	26.3	4.66	0.848
>= 65	9,366	9.0	4.83	0.603
Gender				
Male	49,809	47.9	4.54	0.973
Female	54,204	52.1	4.54	0.999
MTF Type				
Medical Center	16,989	16.3	4.61	0.920
Hospital	33,706	32.4	4.57	0.959
Clinic	53,318	51.3	4.50	1.022
Rank				
Civilian	62,303	59.9	4.52	1.007
O1	1,907	1.8	4.46	1.067
O2	2,838	2.7	4.50	1.015
O3	17,521	16.8	4.55	0.987
O4	14,270	13.7	4.62	0.901
O5	3,911	3.8	4.62	0.902
O6	1,114	1.1	4.72	0.776
Unknown	149	.1	4.50	1.024
Patient Category				
Active Duty	28,904	27.8	4.40	1.096
Active Duty Family Member	33,535	32.2	4.51	1.030
Retired	13,871	13.3	4.74	0.743
Other	27,703	26.6	4.63	0.986
Provider PCM	29,721	28.6	4.65	0.872
Provider Type				
Physician	49,880	48.0	4.55	0.981
Nurse Practitioner	23,901	23.0	4.63	0.884
Physician Assistant	30,232	29.0	4.54	0.986

Beneficiary category had active duty and active duty family members with 60% of cases. Active duty had the lowest satisfaction mean at 4.40 while retirees had the highest at 4.74. Figure 4 illustrates the relationship between provider type and patient satisfaction with respect to patient category. Nurse practitioners scored higher with all four patient categories. Active duty and active duty family members had the lowest mean satisfaction score for all provider types. Retirees appeared to be the most satisfied with care. Retirees and beneficiaries in the "other" category were positively correlated with patient satisfaction.

Physicians accounted for 48% of all cases while nurse practitioners had 23% and Physician assistants had 29%. Nurse practitioners had the highest mean satisfaction score of 4.63 and the lowest standard deviation. The beliefs about the care variables were not included because of the high multiple colinearity. All beliefs about care variables had a correlation of greater than .7 with the dependent variable, overall patient satisfaction. According to Mangelsdorff (2006), multiple colinearity violates the assumption of independence of variables and artificially inflates the R-squared value (personal communication, April, 13, 2006). In order to minimize this effect, the variables pertaining to beliefs about care were excluded.

The mean scores for age group had a pattern of an inverted arc, see Figure 1. The surveys were almost equally distributed between males and females with an average satisfaction score of 4.54. There was not a statistically significant difference between genders. The MTF type showed medical centers

with a surprisingly higher level of satisfaction than hospitals and clinics as shown in Figure 2.

Figure 1

Overall Satisfaction with Provider by Age Group

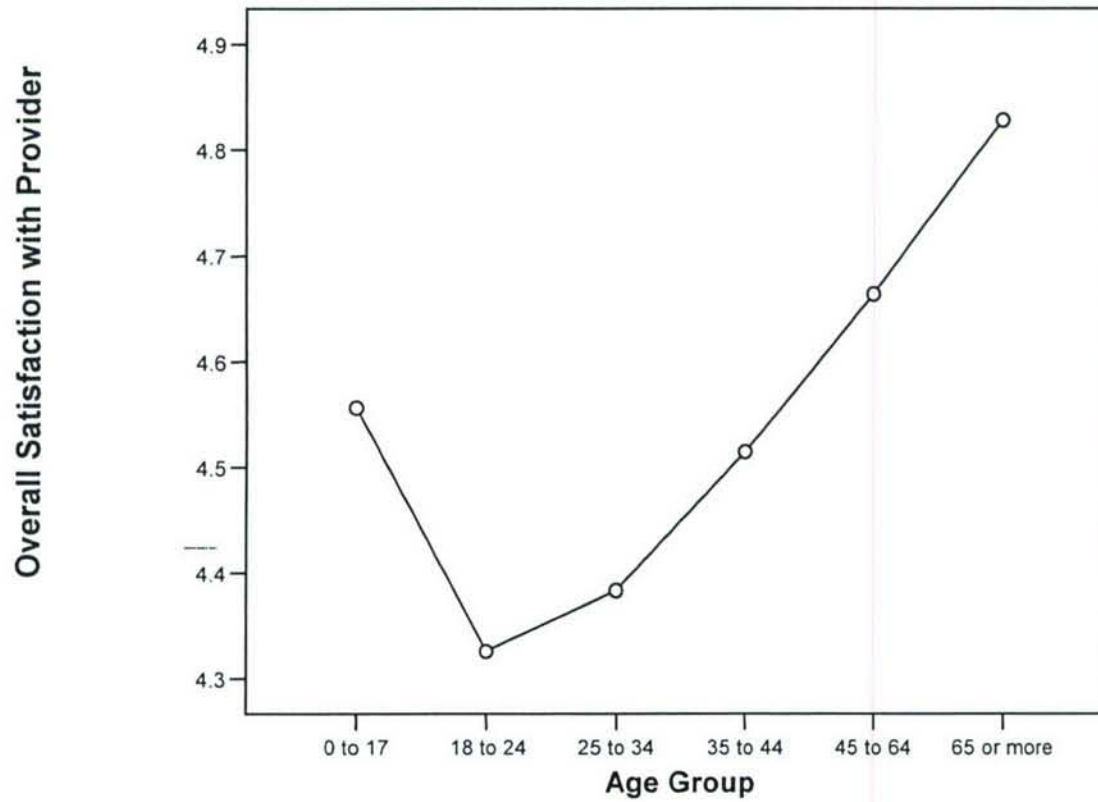
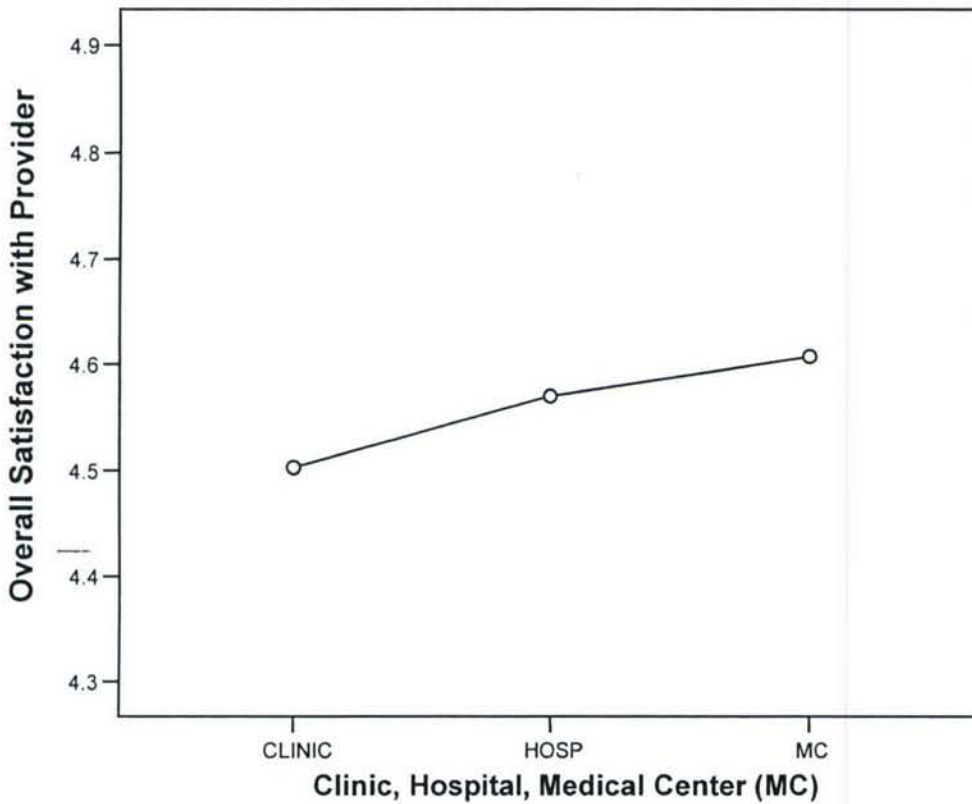


Figure 2

Overall Satisfaction with Provider by Facility Type

Rank served as a proxy for experience since most providers start as an O1 to O3. Physicians and nurses, who enter the military with significant civilian experience, may be commissioned at a higher rank than O3. In some cases, senior nurses went back to school to become nurse practitioners. Rank was predominantly civilian representing over 59% of the providers. Civilian providers had the lowest satisfaction scores while senior military providers who had higher ranks had the highest, as shown in Figure 3. Overall satisfaction with provider by month is displayed in Figure 4.

Figure 3

Overall Satisfaction by Rank of Provider

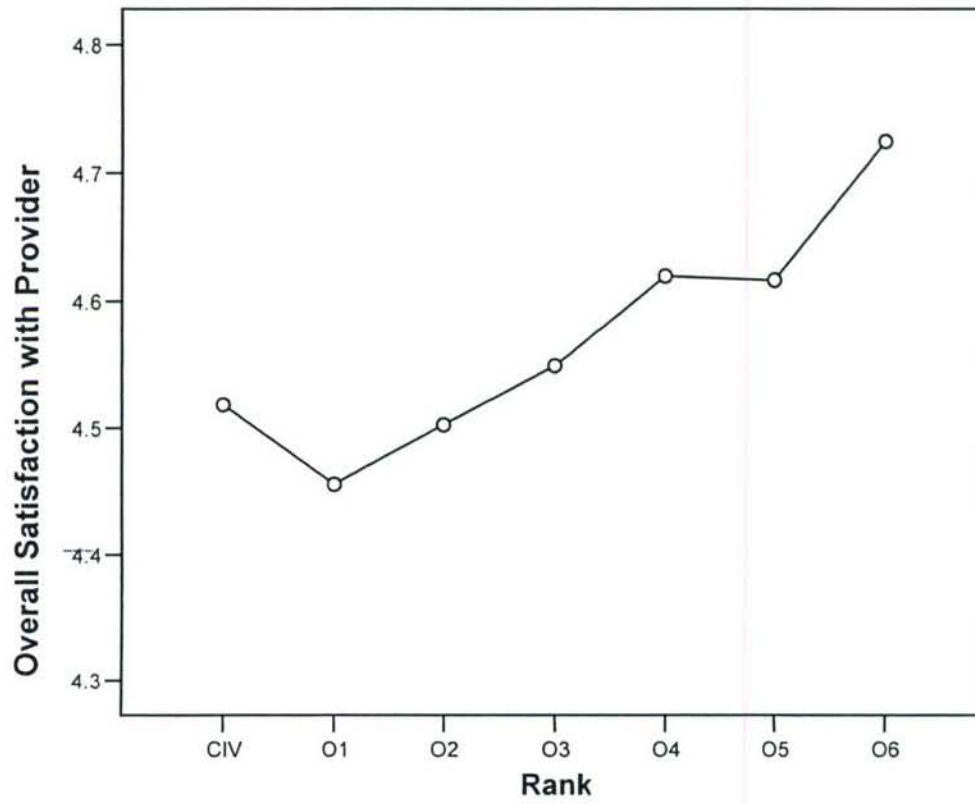
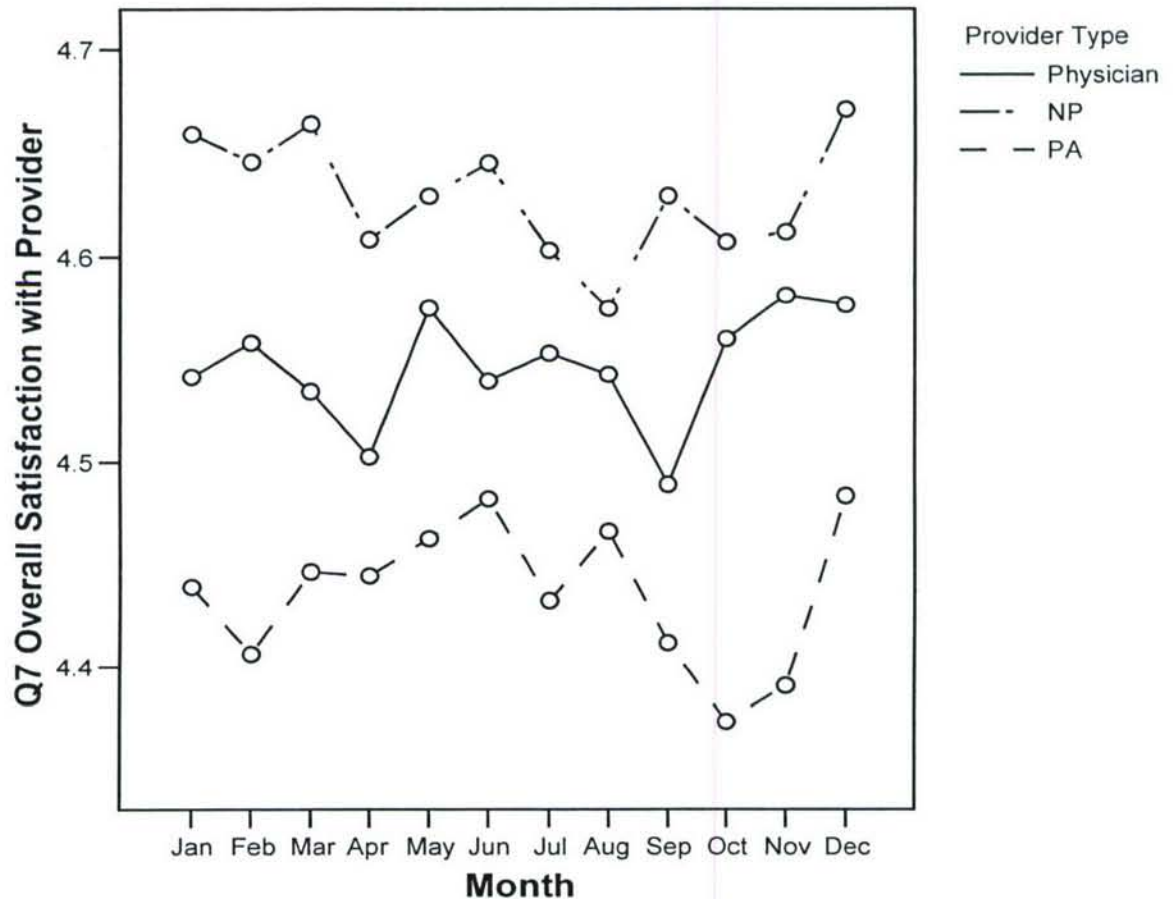


Figure 4

Q7 Overall Satisfaction with Provider

Model 1 inferential statistics are displayed in Table 2. The summary shows the $R = .171$ with adjusted R-square of .029. The F score of 149.814 indicates statistical significance for predicting patient satisfaction at the .0001 level. Even with this high level of significance the low R square value means that a large part of the shared variance is not accounted for by this model.

Table 2
Inferential Statistics: Model 1 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.171(a)	.029	.029	.972	.029	149.814	21	103991	.000

a Predictors: (Constant), Rnk_UKN, Age_35to44, Rnk_O6, Rnk_O5, Cat_FM, Qust_MPCM, MedCen, Rnk_O4, Rnk_O1, Rnk_O2, Age_18to24, NP, Rnk_O3, Hosp, Age_65orMore, Patient_Gender, Age_25to34, PA, Cat_RET, Age_17andBelow, Cat_OTH

b Please see Appendix G SPSS printout for full regression output.

Provider productivity and cost efficiency was analyzed using analysis of variance. In Model 2, productivity was analyzed by the number of encounters per month. In Model 3, productivity was analyzed by RVUs per month. The fourth model used the cost per visit ratio by month. The descriptive statistics for Models 2-4 are shown in Table 3. Physicians had the largest number of providers at 47.5% followed by physician assistants at 38.9% and then nurse practitioners at 13.6% of total cases. Physicians had the lowest mean for encounters per month at 243.98 and physician assistants had the highest at 270.42.

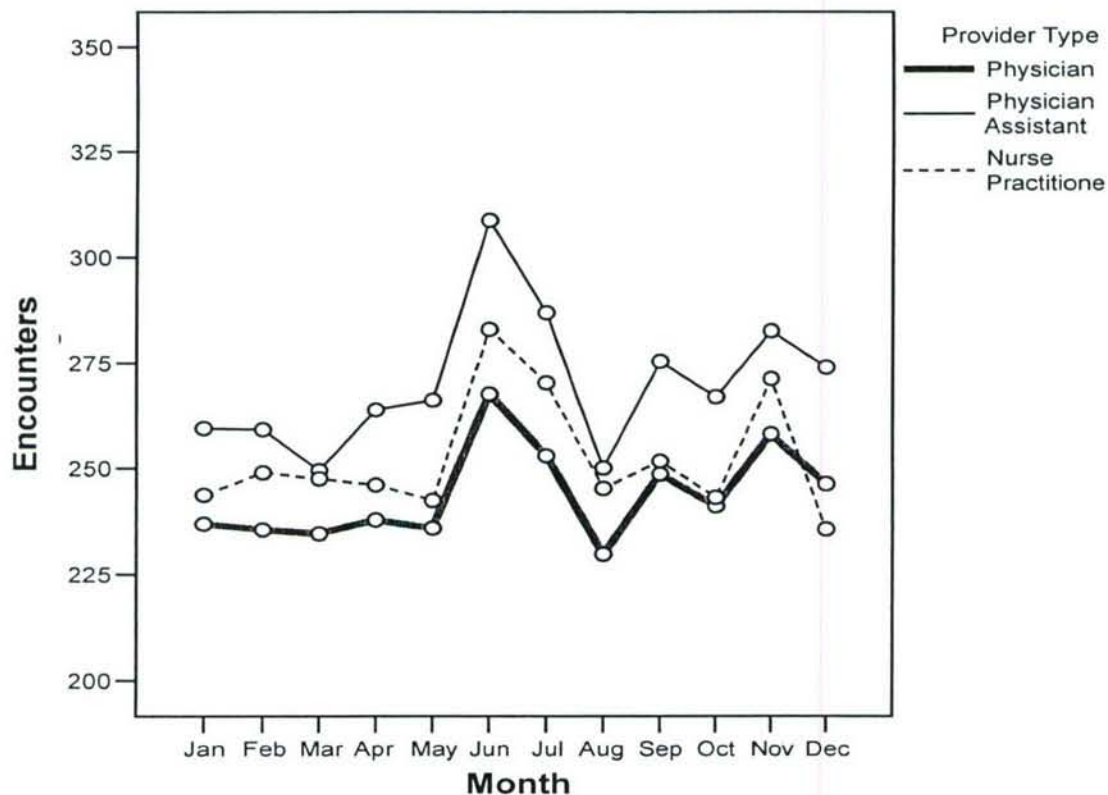
Table 3
Summary Statistics: Encounters, RVUs, and Cost/Visit Ratio by Provider Type

Variable	No. of cases	%	Mean	S.D.
Physicians				
Encounters	9,694	47.5	243.98	100.39
RVUs	9,694	47.5	196.83	45.64
Cost/Visit ratio	9,694	47.5	188.53	81.25
Nurse Practitioners				
Encounters	2784	13.6	252.51	163.44
RVUs	2784	13.6	201.89	114.21
Cost/Visit ratio	2784	13.6	169.45	46.22
Physician Assistants				
Encounters	7943	38.9	270.42	156.24
RVUs	7943	38.9	198.28	113.52
Cost/Visit ratio	7943	38.9	160.64	47.38

Figure 5 shows the mean encounters with respect to the calendar month. The seasonal effects are clearly visible. The summer months of May through August 2004 have a spike in number of encounters for all provider types. November and December have a spike in encounters but not as pronounced as during the summer months. Physicians and nurse practitioners were slightly below the overall mean for encounters during this period.

Figure 5

Model 2: Encounters by Month



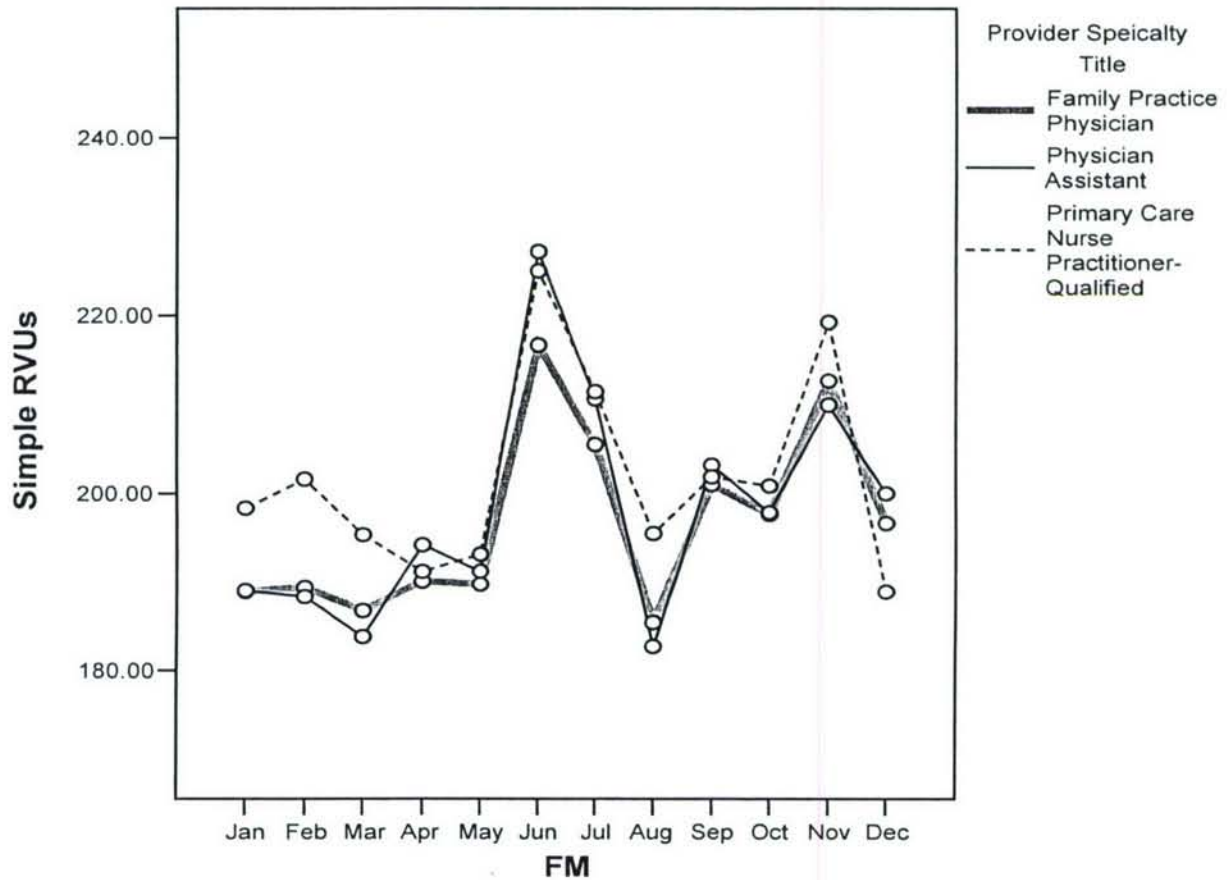
Analysis of Variance: Encounters

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Model 2	Encounters	3079066.459(a)	2	1539533.230	85.901	.000

a. R Squared = .008 (Adjusted R Squared = .008)

In the second model, the mean RVUs were highest with the nurse practitioners at 202.89 with a large standard deviation. Physician assistants were next at 198.28 with a similar standard deviation to the nurse practitioners. The mean for the physicians was slightly lower at 196.83; however, the standard deviation was less than half the nurse practitioner and physician assistant. This may be due to physicians having seen more complicated patients; thus, keeping their average high with minimal variation. The larger standard deviation for the nurse practitioner and physician assistant may mean they saw a wide variety of patients from uncomplicated to complex. The mean RVUs with respect to calendar month are shown in Figure 6. All provider types were closely fit together with the lines overlapping in some places.

Figure 6

Model 3: Simple RVUs by Month**Analysis of Variance: Relative Value Units**

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Model 3	Simple_RVU Simple RVU	55881.505(a)	2	27940.752	2.815	.060

a. R Squared = .000 (Adjusted R Squared = .000)

In Model 4, the cost per visit ratio was lowest for physician assistants at \$160.64 and highest for physicians at \$188.53. The standard deviation for the physician was almost double the standard deviation of nurse practitioners and physician assistants. The higher average cost and higher standard deviation

may be explained by the physicians seeing more complicated patients that required more tests and medicines.

Analysis of Variance: Cost per Visit Ratio

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Model 4	Cost per Visit ratio	3499720.301(a)	2	1749860.150	812.582	.000
a. R Squared = .074 (Adjusted R Squared = .074)						

The analysis of variance shows that Model 2 had an F of 85.901 with a statistical significance of .001 and R square of .008. While statistically significant, the model does not have enough shared variance to be a reliable predictor of encounters. Model 3 did not meet the alpha level of .05 for statistical significance. Model 4 had an F of 812.582 with a statistical significance of less than .001 and R square of .074.

Limitations

The satisfaction survey addresses a recent visit, but did not address the acuity level of the visit. Acuity of the visit was reflected in the RVU score; however, it could not be matched to the same encounter that the satisfaction survey was completed on. The PLPSS was limited to Army facilities which limit the generalizability of the results of the satisfaction component to the other branches of service. In a study by Mangelsdorff and Finstuen (2005), patient satisfaction was found to be homogenous across all branches of service which appears to mitigate this limitation. All branches of service were included in Models 2-4. The shared variance as indicated by R squared value was low for both productivity and patient satisfaction.

Discussion

The purpose of this one year retrospective quantitative study was to determine if the type of provider influences patient satisfaction and if there are differences productivity measures and cost efficiency. The results of this study indicated that there was a statistically significant difference in provider types. Nurse practitioners scored higher on patient satisfaction scores than physicians or physician assistants. This is consistent with other studies in the literature Laurant Et al., (2005). Physician assistants had the highest encounter and RVU levels and the physicians had the lowest. This may be due to inpatient duties that physicians have that nurse practitioners and physician assistants do not have. The provider rank scores indicated that patients were more satisfied with the more experienced providers. This may be the because of a Halo effect with senior providers. The lower satisfaction scores for the civilian providers may be because of the lack of rank devices to distinguish the civilian providers from technicians leading the patient to perceive the provider as a technician. Results from the age group and patient category variables indicated that retired and older patients were more satisfied with the MTF providers than the younger active duty beneficiaries. This is consistent with a previous study by Mangelsdorff and Finstuen (2005).

The new prospective payment system for the military health system provides strong incentives for MTFs to contain cost, increase efficiency and maintain quality health care. Quality healthcare has been previously theorized to include structures, processes and outcomes by Donabedian (1966). Structures

such as provider mix can be manipulated by management decisions to affect outcomes. Important healthcare outcomes that are frequently measured are patient satisfaction and productivity. The findings of this study show that nurse practitioners consistently have higher patient satisfaction scores than physicians or physician assistants. The productivity results show that there is no difference in RVUs among physicians, physician assistants, and nurse practitioners and is consistent with prior studies. In a comparison study by Sullivan-Marx and Maislin (2000), RVUs of nurse practitioners were compared with Physician RVUs and concluded that there were no significant differences in the two provider types. Physician assistants had the highest average number of encounters and the lowest cost per visit ratio. The lower number of encounters seen by nurse practitioners may be explained by increased time spent with the patient. The cost per visit ratio was the best model, based on higher R-squared values and greater significance level, which showed statistically significant differences in the provider types and cost per visit. Difference in training may account for a small amount of the differences in patient satisfaction and productivity.

Conclusions

For Model 1, reject null hypothesis and accept the alternate hypothesis that there is a relationship between provider type and patient satisfaction. Nurse practitioners consistently achieved higher levels of patient satisfaction and this is consistent with other studies. More experienced providers as indicated by rank have higher satisfaction scores. Model 2 had statistical significance but the R-squared was very low at .008. For Model 3, accept the null hypothesis that there

is no difference in provider type and RVUs produced. For Model 4, reject the null hypothesis and accept the alternate hypothesis that there is a difference in provider type and cost per visit. Physician assistants maintain equal levels of RVUs and encounters at a lower cost per visit.

Recommendations

Further studies are needed to include acuity of the patient at the time of the visit and provider experience in years. This study may be useful to the hospital administrator who wishes to increase patient satisfaction, productivity, and cost efficiency by changing the provider type mix; however, these results should applied with caution due to low R-squared value. This study supports retaining experienced clinical staff, nurse practitioners, and physician assistants to achieve high levels of productivity and patient satisfaction.

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Appendix A

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DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
SURVEY PROGRAM OFFICE (SUITE 609)
5109 LEESBURG PIKE
FALLS CHURCH, VA 22041-3258



Please use pen or dark pencil to mark an "X" in the answer box.

Correct Incorrect
EXAMPLES: ☒ ☐ ☐ ☐

Please return your completed questionnaire in the enclosed envelope to, P.O. Box 5033, Chicago, IL 60680.

Army Patient Satisfaction Survey

We need your help. We are trying to improve the quality of care we give our Soldiers and their families.

According to our records you recently had a healthcare visit with Barbara A Yarber on 05/13/2005 at the Wm Beaumont Army Medical Center. Is this correct?

- Yes ☐ → Please continue with the survey.
No, saw someone else... ☐ → Please continue with Q9.
No, didn't have visit ☐ → Please stop and return your survey now.

Thinking specifically about your visit with Barbara A Yarber on 05/13/2005 at the Wm Beaumont Army Medical Center, please rate how much you disagree or agree with each of the following. Please mark an "X" in the box for the answer that is closest to your opinion.

	Completely Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Completely Agree
1. This provider, Barbara A Yarber, spent the time with you that your medical problem required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. This provider listened to you carefully about your concerns and questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. This provider understood your problem or condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. This provider treated you with courtesy and respect	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. This provider explained what was being done and why	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. This provider helped you with your problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Completely Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Completely Satisfied
7. Overall, how satisfied do you feel about your visit with Barbara A Yarber?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Which of the following best describes your familiarity with Barbara A Yarber?					
This provider is my Primary Care Manager (PCM) whom I see for most of my routine care	<input type="checkbox"/>				
This provider is not my PCM, but I had met or heard of him/her before this visit	<input type="checkbox"/>				
This provider is not my PCM, I had a referral to see this provider	<input type="checkbox"/>				
This provider is not my PCM, and I had never met or heard of him/her before this visit.....	<input type="checkbox"/>				

Please turn over and continue on the back page.

Appendix B

Provider Specialties

ADOLESCENT MEDICINE	2	ADOLESCENT MEDICINE
ADOLESCENT MEDICINE PHYSICIAN	3	ADOLESCENT MEDICINE
PHYSICIAN		
AEROSPACE MED FLIGHT	4	AEROSPACE MED FLIGHT
SURGEON/FAMILY PRACTICE	4	SURGEON/FAMILY PRACTICE
PHYSICIAN	4	PHYSICIAN
AEROSPACE MEDICINE	5	AEROSPACE MEDICINE
AEROSPACE MEDICINE PHYSICIAN	6	AEROSPACE MEDICINE
PHYSICIAN		
ALLERGIST	7	ALLERGIST
ALLERGY	8	ALLERGY
ANESTHESIOLOGIST	9	ANESTHESIOLOGIST
ANESTHESIOLOGY	10	ANESTHESIOLOGY
ANESTHESIOLOGY RESIDENT	11	ANESTHESIOLOGY RESIDENT
AUDIOLOGIST	12	AUDIOLOGIST
AUDIOLOGY	13	AUDIOLOGY
CARDIAC SURGEON	14	CARDIAC SURGEON
CARDIOLOGIST	15	CARDIOLOGIST
CARDIOLOGIST, PEDIATRIC	16	CARDIOLOGIST, PEDIATRIC
CARDIOLOGY	17	CARDIOLOGY
CERTIFIED NURSE MIDWIFE	18	CERTIFIED NURSE MIDWIFE
CLINICAL NURSE - ENTRY LEVEL FOR	19	CLINICAL NURSE - ENTRY
LEVEL FOR		
NURSE PRACTITIONER	19	NURSE PRACTITIONER
CLINICAL PSYCHOLOGIST	20	CLINICAL PSYCHOLOGIST
COLON & RECTAL SURGEON	21	COLON & RECTAL SURGEON
COMMUNITY HEALTH	22	COMMUNITY HEALTH
COMMUNITY HEALTH NURSE	23	COMMUNITY HEALTH NURSE
CONTRACT CHIROPRACTOR	24	CONTRACT CHIROPRACTOR
CONTRACT PHYSICIAN (NOT ON	25	CONTRACT PHYSICIAN (NOT ON
CONSULTANT LIST)	25	CONSULTANT LIST)
CORPSMAN/TECHNICIAN	26	CORPSMAN/TECHNICIAN
CRITICAL CARE MEDICINE	27	CRITICAL CARE MEDICINE
DERMATOLOGIST	28	DERMATOLOGIST
DERMATOLOGIST RESIDENT	29	DERMATOLOGIST RESIDENT
DERMATOLOGY	30	DERMATOLOGY
DIAGNOSTIC RADIOLOGIST	31	DIAGNOSTIC RADIOLOGIST
DIETETICS	32	DIETETICS
DIETICIAN-NUTRITIONIST	33	DIETICIAN-NUTRITIONIST
DRUG ABUSE COUNSELOR	34	DRUG ABUSE COUNSELOR
EMERGENCY MEDICINE	35	EMERGENCY MEDICINE
EMERGENCY PHYSICIAN	36	EMERGENCY PHYSICIAN
EMERGENCY PHYSICIAN RESIDENT	37	EMERGENCY PHYSICIAN
RESIDENT		
ENDOCRINOLOGIST	38	ENDOCRINOLOGIST
ENDOCRINOLOGIST, OB/GYN	39	ENDOCRINOLOGIST, OB/GYN
ENDOCRINOLOGIST, PEDIATRIC	40	ENDOCRINOLOGIST, PEDIATRIC
ENDOCRINOLOGY	41	ENDOCRINOLOGY
FAMILY PRACTICE PHYSICIAN	42	FAMILY PRACTICE PHYSICIAN
FAMILY PRACTICE PHYSICIAN	43	FAMILY PRACTICE PHYSICIAN
RESIDENT	43	RESIDENT

FAMILY PRACTICE/PRIMARY CARE
CARE
GASTROENTEROLOGIST
GASTROENTEROLOGIST, PEDIATRIC
PEDIATRIC

—

GASTROENTEROLOGY
GENERAL MEDICAL OFFICER
GENERAL MEDICINE
GENERAL SURGEON
GYNECOLOGY
HAND SURGEON
HEMATOLOGIST
HEMATOLOGIST, PEDIATRIC
HEMATOLOGY
IMMUNOLOGY
INFECTIOUS DISEASE
INFECTIOUS DISEASES PHYSICIAN
PHYSICIAN
INFECTIOUS DISEASES PHYSICIAN,
PHYSICIAN,
PEDIATRIC
INTERNAL MEDICINE
INTERNAL MEDICINE CONSULTANT
CONSULTANT
INTERNAL MEDICINE RESIDENT
INTERNIST
MEDICAL CHEMIST
NEPHROLOGIST
NEPHROLOGIST, PEDIATRIC
NEPHROLOGY
NEUROLOGICAL SURGEON
NEUROLOGIST
NEUROLOGIST RESIDENT
NEUROLOGIST, PEDIATRIC
NEUROLOGY
NURSE MIDWIFE - ENTRY LEVEL
LEVEL
NURSE, GENERAL DUTY
NURSING
NUTRITION
OB/GYN
OB/GYN NURSE PRACTITIONER
OB/GYN RESIDENT
OBSTETRICIAN & GYNECOLOGIST
GYNECOLOGIST
(OB/GYN)
OBSTETRICS
OCCUPATIONAL HEALTH
OCCUPATIONAL MEDICINE PHYSICIAN
PHYSICIAN
OCCUPATIONAL THERAPIST
ONCOLOGIST
ONCOLOGY
OPHTHALMOLOGIST

44 FAMILY PRACTICE/PRIMARY
45 GASTROENTEROLOGIST
46 GASTROENTEROLOGIST,
47 GASTROENTEROLOGY
48 GENERAL MEDICAL OFFICER
49 GENERAL MEDICINE
50 GENERAL SURGEON
51 GYNECOLOGY
52 HAND SURGEON
53 HEMATOLOGIST
54 HEMATOLOGIST, PEDIATRIC
55 HEMATOLOGY
56 IMMUNOLOGY
57 INFECTIOUS DISEASE
58 INFECTIOUS DISEASES
59 INFECTIOUS DISEASES
59 PEDIATRIC
60 INTERNAL MEDICINE
61 INTERNAL MEDICINE
62 INTERNAL MEDICINE RESIDENT
63 INTERNIST
64 MEDICAL CHEMIST
65 NEPHROLOGIST
66 NEPHROLOGIST, PEDIATRIC
67 NEPHROLOGY
68 NEUROLOGICAL SURGEON
69 NEUROLOGIST
70 NEUROLOGIST RESIDENT
71 NEUROLOGIST, PEDIATRIC
72 NEUROLOGY
73 NURSE MIDWIFE - ENTRY
74 NURSE, GENERAL DUTY
75 NURSING
76 NUTRITION
77 OB/GYN
78 OB/GYN NURSE PRACTITIONER
79 OB/GYN RESIDENT
80 OBSTETRICIAN &
80 (OB/GYN)
81 OBSTETRICS
82 OCCUPATIONAL HEALTH
83 OCCUPATIONAL MEDICINE
84 OCCUPATIONAL THERAPIST
85 ONCOLOGIST
86 ONCOLOGY
87 OPHTHALMOLOGIST

OPHTHALMOLOGY
OPHTHALMOLOGY RESIDENT
OPTOMETRIST
OPTOMETRY
ORTHOPEDIC RESIDENT
ORTHOPEDIC SURGEON
ORTHOPEDICS
OTHER BIOMEDICAL SPECIALIST
SPECIALIST
OTHER CONSULTANT
OTHER PROVIDER (OFFICER)

88 OPHTHALMOLOGY
89 OPHTHALMOLOGY RESIDENT
90 OPTOMETRIST
91 OPTOMETRY
92 ORTHOPEDIC RESIDENT
93 ORTHOPEDIC SURGEON
94 ORTHOPEDICS
95 OTHER BIOMEDICAL
96 OTHER CONSULTANT
97 OTHER PROVIDER (OFFICER)

OTORHINOLARYNGOLOGIST
OTORHINOLARYNGOLOGY
OTORHINOLARYNGOLOGY RESIDENT
RESIDENT
PEDIATRIC MEDICINE CONSULTANT
CONSULTANT
PEDIATRIC NURSE PRACTITIONER
PRACTITIONER
PEDIATRIC RESIDENT
PEDIATRIC SURGEON
PEDIATRICIAN
PEDIATRICS
PEDIATRICS, DEVELOPMENTAL
PERINATOLOGIST
PERIPHERAL VASCULAR SURGEON
SURGEON
PHYSICAL MEDICINE &
REHABILITATION
PHYSICAL MEDICINE PHYSICIAN
PHYSICIAN
PHYSICAL THERAPIST
PHYSICIAN ASSISTANT
PLASTIC SURGEON
PLASTIC SURGERY RESIDENT
PODIATRIST
PODIATRY
PREVENTIVE MEDICINE
PREVENTIVE MEDICINE PHYSICIAN
PHYSICIAN
PRIMARY CARE NURSE PRACTITIONER
PRACTITIONER
- ENTRY
PRIMARY CARE NURSE PRACTITIONER
PRACTITIONER
QUALIFIED
PROCTOLOGY
PSYCHIATRIST
PSYCHIATRY
PSYCHOLOGY
PSYCHOLOGY SOCIAL WORKER
PULMONARY DISEASE
PULMONARY DISEASES PHYSICIAN
PHYSICIAN

98 OTORHINOLARYNGOLOGIST
99 OTORHINOLARYNGOLOGY
100 OTORHINOLARYNGOLOGY
101 PEDIATRIC MEDICINE
102 PEDIATRIC NURSE
103 PEDIATRIC RESIDENT
104 PEDIATRIC SURGEON
105 PEDIATRICIAN
106 PEDIATRICS
107 PEDIATRICS, DEVELOPMENTAL
108 PERINATOLOGIST
109 PERIPHERAL VASCULAR
110 PHYSICAL MEDICINE &
110 REHABILITATION
111 PHYSICAL MEDICINE
112 PHYSICAL THERAPIST
113 PHYSICIAN ASSISTANT
114 PLASTIC SURGEON
115 PLASTIC SURGERY RESIDENT
116 PODIATRIST
117 PODIATRY
118 PREVENTIVE MEDICINE
119 PREVENTIVE MEDICINE
120 PRIMARY CARE NURSE
120 - ENTRY
121 PRIMARY CARE NURSE
121 QUALIFIED
122 PROCTOLOGY
123 PSYCHIATRIST
124 PSYCHIATRY
125 PSYCHOLOGY
126 PSYCHOLOGY SOCIAL WORKER
127 PULMONARY DISEASE
128 PULMONARY DISEASES

PULMONARY DISEASES PHYSICIAN,
 PHYSICIAN,
 PEDIATRIC
 RADIATION THERAPIST
 RADIOLOGIST
 RADIOLOGY
 RADIOLOGY RESIDENT
 RESIDENT SURGEON
 RHEUMATOLOGIST
 RHEUMATOLOGY
 SLEEP DISORDERS
 SPEECH THERAPIST
 SURGERY
 SURGERY CONSULTANT
 THERAPY, OCCUPATIONAL
 THERAPY, PHYSICAL
 THORACIC SURGEON
 THORACIC SURGERY
 UNKNOWN
 UROLOGIST
 UROLOGY
 UROLOGY CONSULTANT
 UROLOGY RESIDENT

129 PULMONARY DISEASES
 129 PEDIATRIC
 130 RADIATION THERAPIST
 131 RADIOLOGIST
 132 RADIOLOGY
 133 RADIOLOGY RESIDENT
 134 RESIDENT SURGEON
 135 RHEUMATOLOGIST
 136 RHEUMATOLOGY
 137 SLEEP DISORDERS
 138 SPEECH THERAPIST
 139 SURGERY
 140 SURGERY CONSULTANT
 141 THERAPY, OCCUPATIONAL
 142 THERAPY, PHYSICAL
 143 THORACIC SURGEON
 144 THORACIC SURGERY
 145 UNKNOWN
 146 UROLOGIST
 147 UROLOGY
 148 UROLOGY CONSULTANT
 149 UROLOGY RESIDENT

Appendix C

Provider Class

ADMIN-NURSE	1	ADMIN-NURSE
ADULT NURSE PRAC	2	ADULT NURSE PRAC
ADVANCED ALLIED	3	ADVANCED ALLIED
ALLERGIST	4	ALLERGIST
ANESTHESIA RESIDENT	5	ANESTHESIA RESIDENT
ANESTHESIOLOGIST	6	ANESTHESIOLOGIST
AUDIOLOGIST	7	AUDIOLOGIST
AUDIOLOGIST 2Z	8	AUDIOLOGIST 2Z
AUDIOLOGY TECH	9	AUDIOLOGY TECH
BAMC CORPSMAN/TECHNICIAN	10	BAMC CORPSMAN/TECHNICIAN
BAMC PA AND NP	11	BAMC PA AND NP
BAMC RESIDENT/FELLOW	12	BAMC RESIDENT/FELLOW
CARDIOLOGIST	13	CARDIOLOGIST
CARDIOLOGY FELLOW	14	CARDIOLOGY FELLOW
CARDIOTHORACIC SURGEON	15	CARDIOTHORACIC SURGEON
CASE MANAGER	16	CASE MANAGER
CERTIFIED NURSE MIDWIFE	17	CERTIFIED NURSE MIDWIFE
CERTIFIED NURSING ASSISTANT	18	CERTIFIED NURSING ASSISTANT
CHIROPRACTOR	19	CHIROPRACTOR
CLERK	20	CLERK
CLIN VISIT	21	CLIN VISIT
CLINICAL CLERK	22	CLINICAL CLERK
CLINICAL DIETICIAN	23	CLINICAL DIETICIAN
CLINICAL NURSE	24	CLINICAL NURSE
CLINICAL NURSE SPECIALIST	25	CLINICAL NURSE SPECIALIST
CLINICAL PHARMACIST	26	CLINICAL PHARMACIST
COMMUNITY HEALTH NURSE	27	COMMUNITY HEALTH NURSE
CONTRACT CHIROPRACTOR	28	CONTRACT CHIROPRACTOR
CONTRACT PEDIATRICIAN	29	CONTRACT PEDIATRICIAN
CONTRACT/PAR	30	CONTRACT/PAR
COUNTER SIGNING PHYSICIAN	31	COUNTER SIGNING PHYSICIAN
DEPLOYED PA	32	DEPLOYED PA
DEPLOYED PHYSICIAN	33	DEPLOYED PHYSICIAN
DERMATOLOGIST	34	DERMATOLOGIST
DERMATOLOGY RESIDENT	35	DERMATOLOGY RESIDENT
DIET TECHNICIAN	36	DIET TECHNICIAN
DIETICIAN	37	DIETICIAN
DIETICIAN 2Z	38	DIETICIAN 2Z
DIETICIAN FE	39	DIETICIAN FE
DIETITIAN	40	DIETITIAN
DIETITIAN CREDENTIALLED	41	DIETITIAN CREDENTIALLED
DO	42	DO
EMER MED PHYSICIAN ASSISTANT	43	EMER MED PHYSICIAN ASSISTANT
EMERGENCY MEDICINE PHYSICIAN	44	EMERGENCY MEDICINE PHYSICIAN
EMERGENCY PHYSICIAN	45	EMERGENCY PHYSICIAN
ENDOCRINOLOGIST	46	ENDOCRINOLOGIST
ENT RESIDENT	47	ENT RESIDENT
ER MEDICINE RESIDENT	48	ER MEDICINE RESIDENT
FAMILY NURSE PRAC	49	FAMILY NURSE PRAC
FAMILY NURSE PRACTITIONER	50	FAMILY NURSE PRACTITIONER

FAMILY PHYSICIAN
 FAMILY PRACTICE INTERN
 FAMILY PRACTICE PHYSICIAN
 FAMILY PRACTICE PHYSICIAN EVAN
 EVAN
 FAMILY PRACTICE RESIDENT
 FAMILY PRACTITIONER
 FELLOW
 FLIGHT SURGEON
 FP NURSE PRACTITIONER
 GASTROENTEROLOGIST
 GASTROENTEROLOGY FELLOW
 GASTROENTEROLOGY RESIDENT
 GEN SURG
 GENERAL MEDICAL OFFICER
 GENERAL PHYSICIAN
 GENERAL SURGEON
 GENERAL SURGERY
 GENERAL SURGERY RESIDENT
 GYNECOLOGIST
 HCP
 HEAD NURSE
 HEALTH SERVICES TECHNICIAN
 HEALTH TECHNICIAN 4Z
 HEM/ONC FELLOW
 HEMATOLOGIST/ONCOLOGIST
 INFECTIOUS DISEASE SPECIALIST
 SPECIALIST
 INTERN
 INTERNAL MEDICINE
 INTERNAL MEDICINE RESIDENT
 INTERNIST
 INTERNIST/PEDIATRICIAN
 LICENSED PRACTICAL NURSE
 LICENSED PRACTICAL NURSE 4L
 LPN
 LVN (STANDARD)
 LVN SPECIAL
 LVN/LPN/91C
 MAMC_AUDIOLOGIST
 MCP NETWORK PROVIDER
 MED NURSE PRACTITIONER
 MEDICAL CLERK
 MEDICAL CLERK 5C
 MEDICAL SPECIALIST
 MEDICAL STUDENT 1Z
 MEDICAL TECHNICIAN
 MEDICINE INTERN
 MEDICINE RESIDENT
 NA/MED SPECIALIST/91B
 NEPHROLOGIST
 NEUROLOGIST
 NEUROSURGEON
 NURSE
 NURSE ASSISTANT

51 FAMILY PHYSICIAN
 52 FAMILY PRACTICE INTERN
 53 FAMILY PRACTICE PHYSICIAN
 54 FAMILY PRACTICE PHYSICIAN
 55 FAMILY PRACTICE RESIDENT
 56 FAMILY PRACTITIONER
 57 FELLOW
 58 FLIGHT SURGEON
 59 FP NURSE PRACTITIONER
 60 GASTROENTEROLOGIST
 61 GASTROENTEROLOGY FELLOW
 62 GASTROENTEROLOGY RESIDENT
 63 GEN SURG
 64 GENERAL MEDICAL OFFICER
 65 GENERAL PHYSICIAN
 66 GENERAL SURGEON
 67 GENERAL SURGERY
 68 GENERAL SURGERY RESIDENT
 69 GYNECOLOGIST
 70 HCP
 71 HEAD NURSE
 72 HEALTH SERVICES TECHNICIAN
 73 HEALTH TECHNICIAN 4Z
 74 HEM/ONC FELLOW
 75 HEMATOLOGIST/ONCOLOGIST
 76 INFECTIOUS DISEASE
 77 INTERN
 78 INTERNAL MEDICINE
 79 INTERNAL MEDICINE RESIDENT
 80 INTERNIST
 81 INTERNIST/PEDIATRICIAN
 82 LICENSED PRACTICAL NURSE
 83 LICENSED PRACTICAL NURSE 4L
 84 LPN
 85 LVN (STANDARD)
 86 LVN SPECIAL
 87 LVN/LPN/91C
 88 MAMC_AUDIOLOGIST
 89 MCP NETWORK PROVIDER
 90 MED NURSE PRACTITIONER
 91 MEDICAL CLERK
 92 MEDICAL CLERK 5C
 93 MEDICAL SPECIALIST
 94 MEDICAL STUDENT 1Z
 95 MEDICAL TECHNICIAN
 96 MEDICINE INTERN
 97 MEDICINE RESIDENT
 98 NA/MED SPECIALIST/91B
 99 NEPHROLOGIST
 100 NEUROLOGIST
 101 NEUROSURGEON
 102 NURSE
 103 NURSE ASSISTANT

NURSE CONSULTANT
 NURSE MIDWIFE
 NURSE MIDWIFE 2M
 NURSE PRACTITIONER
 NURSE PRACTITIONER
 NURSE PRACTITIONER 2N
 NURSE, LPN
 NURSE, RN
 NURSING ASSISTANT
 NURSING ASSISTANT 4A
 NUTRITIONIST
 OB NURSE PRACTITIONER
 OB/GYN
 OB/GYN INTERN
 OB/GYN NURSE PRAC
 OB/GYN NURSE PRACT
 OB/GYN RESIDENT
 OBSTETRICIAN/GYNECOLOGIST
 OBSTETRICS & GYNECOLOGY
 OCC HLTH TECH
 OCCUPATIONAL HEALTH NURSE
 OCCUPATIONAL THERAPIST-MSE
 OCCUPATIONAL THERAPIST
 OCCUPATIONAL THERAPIST CRED
 ONCOLOGIST
 OPHTHALMOLOGIST
 OPHTHALMOLOGIST
 OPHTHALMOLOGY
 OPTOMETRIST
 OPTOMETRIST 2Z
 OPTOMETRY
 OPTOMETRY TECH
 ORDERING CLERK
 ORTHOPAEDIC SURGEON
 ORTHOPEDIC
 ORTHOPEDIC INTERN
 ORTHOPEDIC SURGEON
 ORTHOPEDICS RESIDENT
 OSTEOPATH
 OT INTERN
 OTOLARYNGOLOGIST
 OTOLARYNGOLOGY
 OTOLARYNGOLOGY RESIDENT
 OTORHINOLARYNGOLOGIST
 OUTSIDE PROVIDER
 PC NURSE PRACTITIONER
 PEDIATRIC
 PEDIATRIC NURSE PRAC
 PEDIATRIC NURSE PRACTITIONER
 PEDIATRIC RESIDENT
 PEDIATRICIAN
 PEDIATRICS INTERN
 PEDIATRICS RESIDENT

104 NURSE CONSULTANT
 105 NURSE MIDWIFE
 106 NURSE MIDWIFE 2M
 107 NURSE PRACTITIONER
 108 NURSE PRACTITIONER
 109 NURSE PRACTITIONER 2N
 110 NURSE, LPN
 111 NURSE, RN
 112 NURSING ASSISTANT
 113 NURSING ASSISTANT 4A
 114 NUTRITIONIST
 115 OB NURSE PRACTITIONER
 116 OB/GYN
 117 OB/GYN INTERN
 118 OB/GYN NURSE PRAC
 119 OB/GYN NURSE PRACT
 120 OB/GYN RESIDENT
 121 OBSTETRICIAN/GYNECOLOGIST
 122 OBSTETRICS & GYNECOLOGY
 123 OCC HLTH TECH
 124 OCCUPATIONAL HEALTH NURSE
 125 OCCUPATIONAL THERAPIST-MSE
 126 OCCUPATIONAL THERAPIST
 127 OCCUPATIONAL THERAPIST CRED
 128 ONCOLOGIST
 129 OPHTHALMOLOGIST
 130 OPHTHALMOLOGIST
 131 OPHTHALMOLOGY
 132 OPTOMETRIST
 133 OPTOMETRIST 2Z
 134 OPTOMETRY
 135 OPTOMETRY TECH
 136 ORDERING CLERK
 137 ORTHOPAEDIC SURGEON
 138 ORTHOPEDIC
 139 ORTHOPEDIC INTERN
 140 ORTHOPEDIC SURGEON
 141 ORTHOPEDICS RESIDENT
 142 OSTEOPATH
 143 OT INTERN
 144 OTOLARYNGOLOGIST
 145 OTOLARYNGOLOGY
 146 OTOLARYNGOLOGY RESIDENT
 147 OTORHINOLARYNGOLOGIST
 148 OUTSIDE PROVIDER
 149 PC NURSE PRACTITIONER
 150 PEDIATRIC
 151 PEDIATRIC NURSE PRAC
 152 PEDIATRIC NURSE PRACTITIONER
 153 PEDIATRIC RESIDENT
 154 PEDIATRICIAN
 155 PEDIATRICS INTERN
 156 PEDIATRICS RESIDENT

PHARM-D
 PHARMACIST
 PHARMACIST 2Z
 PHYSIATRIST
 PHYSICAL MEDICINE
 PHYSICAL THERAPIST-HCP
 PHYSICAL THERAPIST - HCP
 PHYSICAL THERAPIST
 PHYSICAL THERAPIST + EXTRA
 PHYSICAL THERAPIST 2Z
 PHYSICAL THERAPIST ASSISTANT
 PHYSICAL THERAPY ASSISTANT
 PHYSICAL THERAPY TECH
 PHYSICIAN
 PHYSICIAN ASSISTANT
 PHYSICIAN ASSISTANT 2Z
 PHYSICIAN ASSISTANT RESIDENT
 PHYSICIAN DO
 PHYSICIAN FELLOW 1F
 PHYSICIAN INTERN 1N
 PHYSICIAN MD
 PHYSICIAN RESIDENT 1R
 PHYSICIAN STAFF 1P
 PLASTIC SURGEON
 PODIATRIST
 PODIATRIST 2Z
 PRACTICAL NURSE
 PRI CARE NURSE PRACTITIONER
 PRIVILEGED CLERK
 PRIVILEGED NURSE
 PROVIDER
 PSYCHIATRY RESIDENT
 PSYCHOLOGIST
 PSYCHOLOGIST 2Z
 PT TECH
 PULMONARY FELLOW
 PULMONOLOGIST
 RADIOLOGIST
 RADIOLOGIST 1P
 REGISTERED DIETITIANS
 REGISTERED NURSE
 REGISTERED NURSE (RN)
 REGISTERED NURSE 3R
 RESIDENT
 RESIDENT PHYSICIAN
 RHEUMATOLOGIST
 RN
 SONOGRAPHER
 SPECIAL CLASS (DOCTOR)
 SPECIAL CLASS (NURSE)
 SPECIAL CLASS OPTOMETRIST
 SPEECH PATHOLOGIST

157 PHARM-D
 158 PHARMACIST
 159 PHARMACIST 2Z
 160 PHYSIATRIST
 161 PHYSICAL MEDICINE
 162 PHYSICAL THERAPIST-HCP
 163 PHYSICAL THERAPIST - HCP
 164 PHYSICAL THERAPIST
 165 PHYSICAL THERAPIST + EXTRA
 166 PHYSICAL THERAPIST 2Z
 167 PHYSICAL THERAPIST ASSISTANT
 168 PHYSICAL THERAPY ASSISTANT
 169 PHYSICAL THERAPY TECH
 170 PHYSICIAN
 171 PHYSICIAN ASSISTANT
 172 PHYSICIAN ASSISTANT 2Z
 173 PHYSICIAN ASSISTANT RESIDENT
 174 PHYSICIAN DO
 175 PHYSICIAN FELLOW 1F
 176 PHYSICIAN INTERN 1N
 177 PHYSICIAN MD
 178 PHYSICIAN RESIDENT 1R
 179 PHYSICIAN STAFF 1P
 180 PLASTIC SURGEON
 181 PODIATRIST
 182 PODIATRIST 2Z
 183 PRACTICAL NURSE
 184 PRI CARE NURSE PRACTITIONER
 185 PRIVILEGED CLERK
 186 PRIVILEGED NURSE
 187 PROVIDER
 188 PSYCHIATRY RESIDENT
 189 PSYCHOLOGIST
 190 PSYCHOLOGIST 2Z
 191 PT TECH
 192 PULMONARY FELLOW
 193 PULMONOLOGIST
 194 RADIOLOGIST
 195 RADIOLOGIST 1P
 196 REGISTERED DIETITIANS
 197 REGISTERED NURSE
 198 REGISTERED NURSE (RN)
 199 REGISTERED NURSE 3R
 200 RESIDENT
 201 RESIDENT PHYSICIAN
 202 RHEUMATOLOGIST
 203 RN
 204 SONOGRAPHER
 205 SPECIAL CLASS (DOCTOR)
 206 SPECIAL CLASS (NURSE)
 207 SPECIAL CLASS OPTOMETRIST
 208 SPEECH PATHOLOGIST

SPEECH PATHOLOGY	210	SPEECH PATHOLOGY
SPEECH THERAPIST	211	SPEECH THERAPIST
STAFF ANESTHESIOLOGIST	212	STAFF ANESTHESIOLOGIST
STAFF AUDIOLOGY & SPEECH	213	STAFF AUDIOLOGY & SPEECH
STAFF CARDIOLOGIST	214	STAFF CARDIOLOGIST
STAFF CARDIOTHORACIC SURGEON	215	STAFF CARDIOTHORACIC SURGEON
STAFF DERMATOLOGIST	216	STAFF DERMATOLOGIST
STAFF ENDOCRINOLOGIST	217	STAFF ENDOCRINOLOGIST
STAFF ER MED PHYSICIAN	218	STAFF ER MED PHYSICIAN
STAFF FAM PRACTICE PHYSICIAN	219	STAFF FAM PRACTICE PHYSICIAN
STAFF GASTROENTEROLOGIST	220	STAFF GASTROENTEROLOGIST
STAFF GENERAL SURGEON	221	STAFF GENERAL SURGEON
STAFF HEM/ONC	222	STAFF HEM/ONC
STAFF INFECTIOUS DISEASE DR	223	STAFF INFECTIOUS DISEASE DR
STAFF INTERNIST	224	STAFF INTERNIST
STAFF NURSE PRACTITIONER	225	STAFF NURSE PRACTITIONER
STAFF OB/GYN PHYSICIAN	226	STAFF OB/GYN PHYSICIAN
STAFF OCCUPATIONAL THERAPIST	227	STAFF OCCUPATIONAL THERAPIST
STAFF OPHTHALMOLOGIST	228	STAFF OPHTHALMOLOGIST
STAFF ORTHOPAEDIC SURGEON	229	STAFF ORTHOPAEDIC SURGEON
STAFF PEDIATRICIAN	230	STAFF PEDIATRICIAN
STAFF PHYSICAL THERAPIST	231	STAFF PHYSICAL THERAPIST
STAFF PHYSICIAN	232	STAFF PHYSICIAN
STAFF PHYSICIAN ASSISTANT	233	STAFF PHYSICIAN ASSISTANT
STAFF PULMONOLOGIST	234	STAFF PULMONOLOGIST
STAFF RADIATION THERAPIST	235	STAFF RADIATION THERAPIST
STAFF RADIOLOGIST	236	STAFF RADIOLOGIST
STAFF RHEUMATOLOGIST	237	STAFF RHEUMATOLOGIST
STAFF UROLOGIST	238	STAFF UROLOGIST
SURGEON	239	SURGEON
SURGERY INTERN	240	SURGERY INTERN
SURGERY RESIDENT	241	SURGERY RESIDENT
TECHNICIAN	242	TECHNICIAN
TECHNOLOGIST 2Z	243	TECHNOLOGIST 2Z
TMC PHYSICIAN ASSISTANT	244	TMC PHYSICIAN ASSISTANT
TRANSITIONAL INTERN	245	TRANSITIONAL INTERN
TRIAGE NURSE	246	TRIAGE NURSE
UROLOGIST	247	UROLOGIST
UROLOGY RESIDENT	248	UROLOGY RESIDENT
UTHSC RESIDENT	249	UTHSC RESIDENT
VASCULAR SURGEON	250	VASCULAR SURGEON
VOLUNTEER PHYSICIAN	251	VOLUNTEER PHYSICIAN
WARD CLERK	252	WARD CLERK
ZZPHYSICIAN	253	ZZPHYSICIAN

Appendix D

SPSS Syntax

The cases contain the date of birth and date of appointment. The date of birth variable is labeled "pat_dob" and date of appointment is labeled "apptdate". The date of birth is subtracted from the date of appointment to get age at time of appointment. The "Age" variable can then be recoded into age group categories and code 1 if present, 0 otherwise.

1. COMPUTE YRMODA(XDATE.YEAR(pat_dob), XDATE.MONTH(pat_dob), XDATE.DAY(pat_dob)) into target variable "Birthdate".
2. COMPUTE YRMODA(XDATE.YEAR(apptdate), XDATE.MONTH(apptdate), XDATE.DAY(apptdate)) into target variable "Appt_date".
3. COMPUTE (Appt_date – Birthdate) / 365 into target variable "Age"
4. RECODE Age (0 THRU 17 = 1) (else = 0) INTO Age_17andBelow.
RECODE Age (18 THRU 25 =1) (else =0) INTO Age_18-24.
RECODE Age (26 THRU 35 =1) (else = 0) INTO Age_25-34.
RECODE Age (36THRU 45 =1) (else = 0) INTO Age_35-44.
RECODE Age (46 THRU 64 =1) (else = 0) INTO Age_45-64.
RECODE Age (65 THRU HI = 1) (else = 0) INTO Age_65orMore.

The variable "prov_rnk" was recoded into two variables Civillian_Prov and Mil_Prov to indicate if provider was military or civilian and Miliary rank was coded into separate rank variable 01 thru 06 and Civ. In 459 cases the rank was unkown, so these were excluded.

RECODE prov_rnk (ACIV =1) (FCIV =1) (NCIV=1) (XCIV=1) (ELSE=0) INTO
Mil_Prov

Appendix E

Patient Categories

Old Value	New Value	Value Label
ARMY SECT DESIGNEE (FMR PAY)	2	ARMY SECT DESIGNEE (FMR PAY)
ARMY SECT DESIGNEE (FRR PAY)	3	ARMY SECT DESIGNEE (FRR PAY)
ARMY SECT DESIGNEE (NO PAY)	4	ARMY SECT DESIGNEE (NO PAY)
CIV EMPL/OTH FED AGEN/NON-DOD, DOD, NEC	5	CIV EMPL/OTH FED AGEN/NON-DOD, DOD, NEC
CIV EMPLOYEE ARMY NATL GUARD GUARD	6	CIV EMPLOYEE ARMY NATL GUARD
CIV FACULTY U OF HEALTH SCIENCES SCIENCES	7	CIV FACULTY U OF HEALTH SCIENCES
CIVILIAN - DISASTER (FEMA)	8	CIVILIAN - DISASTER (FEMA)
CIVILIAN - HUMANITARIAN	9	CIVILIAN - HUMANITARIAN
CIVILIAN EMERGENCY CARE	10	CIVILIAN EMERGENCY CARE
COMMERCE DEPT EMPLOYEE	11	COMMERCE DEPT EMPLOYEE
CONTRACT EMPLOYEE AND FAM MBR MBR	12	CONTRACT EMPLOYEE AND FAM MBR
DOD EMPL OCCUPATIONAL HEALTH HEALTH	13	DOD EMPL OCCUPATIONAL HEALTH
DOD EMPLOYEE REMOTE AREA IN US IN US	14	DOD EMPLOYEE REMOTE AREA IN US
DOD SCHOOL TEACHER OUTSIDE THE THE	15	DOD SCHOOL TEACHER OUTSIDE THE
US	15	US
DOD/VA SHARING AGREEMENT	16	DOD/VA SHARING AGREEMENT
EMERGENCY CARE	17	EMERGENCY CARE
EXCHANGE EMP OCONUS	18	EXCHANGE EMP OCONUS
FAA AIR TRF CONTROLLER PHYS EXAM PHYS EXAM	19	FAA AIR TRF CONTROLLER PHYS EXAM
FAM MBR COMM DEPT EMPL, BUR PUB BUR PUB	20	FAM MBR COMM DEPT EMPL, BUR PUB
RDS	20	RDS
FAM MBR DOD SCHL TEACHR OUTSIDE OUTSIDE	21	FAM MBR DOD SCHL TEACHR OUTSIDE
US	21	US
FAM MBR EXCHANGE EMP OCONUS OCONUS	22	FAM MBR EXCHANGE EMP OCONUS
FAM MBR FED EMPLOYEE ALCH AND DRUG AND DRUG	23	FAM MBR FED EMPLOYEE ALCH AND DRUG
RE	23	RE
FAM MBR NON-DOD FED AGENCY	24	FAM MBR NON-DOD FED AGENCY
FAM MBR OTHER DOD EMPL OUTSIDE OUTSIDE	25	FAM MBR OTHER DOD EMPL OUTSIDE
US	25	US
FED EMPLOYEE ALCH AND DRUG REHAB REHAB	26	FED EMPLOYEE ALCH AND DRUG REHAB
FED GOVT EMPLOYEE IN REMOTE REMOTE	27	FED GOVT EMPLOYEE IN REMOTE

AREAS
 FMS NATO - ITO AGENCY
 FMS NATO - ITO INDIVIDUAL
 FMS NATO CIVILIAN - ITO AGENCY
 AGENCY
 FMS NON-NATO MIL/CIV - ITO
 AGENCY
 FMS NON-NATO MIL/CIV - ITO IND
 IND
 FOREIGN CIVILIAN
 GSA EMPLOYEE
 GUANTANAMO BAY
 IMET NATO
 IMET NON-NATO MILITARY/CIVILIAN
 MILITARY/CIVILIAN
 JUSTICE DEPT EMPLOYEE
 KATUSA
 MERCHANT MARINE ACAD APPLICANT
 APPLICANT
 NAF EMPLOYEE OCONUS
 NATO FAM MBR-CONUS
 NATO FAM MBR-OCONUS

NATO FAM MBR IMET/FMS - ITO
 ITO
 AGENCY
 NATO FAM MBR IMET/FMS - ITO IND
 ITO IND
 NATO MILITARY-CONUS
 NATO MILITARY-OCONUS
 NATO RECIP AGREE - FAM MBR
 NATO RECIP AGREE
 NOAA ACTIVE DUTY
 NOAA FAM MBR AD
 NOAA FAM MBR DECEASED AD
 NOAA FAM MBR DECEASED RETIRED
 RETIRED
 NOAA FAM MBR RET
 NOAA RET LOS
 NOAA RET TDRL
 NOAA UNREMARIED FRM SPOUSE
 SPOUSE
 NON-NATO FAM MBR IMET/FMS - ITO
 - ITO
 AGN
 NON-NATO FAM MBR IMET/FMS - ITO
 - ITO
 IND
 NON-NATO FAM MBR OF OTHER
 MILITARY
 NON-NATO RECIP AGREE - FAM MBR
 MBR
 NON-NATO RECIP AGREE
 OTHER DOD EMPLOYEE OUTSIDE THE
 THE

27 AREAS
 28 FMS NATO - ITO AGENCY
 29 FMS NATO - ITO INDIVIDUAL
 30 FMS NATO CIVILIAN - ITO
 31 FMS NON-NATO MIL/CIV - ITO
 31 AGENCY
 32 FMS NON-NATO MIL/CIV - ITO
 33 FOREIGN CIVILIAN
 34 GSA EMPLOYEE
 35 GUANTANAMO BAY
 36 IMET NATO
 37 IMET NON-NATO
 38 JUSTICE DEPT EMPLOYEE
 39 KATUSA
 40 MERCHANT MARINE ACAD
 41 NAF EMPLOYEE OCONUS
 42 NATO FAM MBR-CONUS
 43 NATO FAM MBR-OCONUS

44 NATO FAM MBR IMET/FMS -
 44 AGENCY
 45 NATO FAM MBR IMET/FMS -
 46 NATO MILITARY-CONUS
 47 NATO MILITARY-OCONUS
 48 NATO RECIP AGREE - FAM MBR
 49 NATO RECIP AGREE
 50 NOAA ACTIVE DUTY
 51 NOAA FAM MBR AD
 52 NOAA FAM MBR DECEASED AD
 53 NOAA FAM MBR DECEASED
 54 NOAA FAM MBR RET
 55 NOAA RET LOS
 56 NOAA RET TDRL
 57 NOAA UNREMARIED FRM
 58 NON-NATO FAM MBR IMET/FMS
 58 AGN
 59 NON-NATO FAM MBR IMET/FMS
 59 IND
 60 NON-NATO FAM MBR OF OTHER
 60 MILITARY
 61 NON-NATO RECIP AGREE - FAM
 62 NON-NATO RECIP AGREE
 63 OTHER DOD EMPLOYEE OUTSIDE

US
 OTHER FEDERAL AGENCY/DEPT
 OTHER NON-NATO MILITARY
 PAC ISLAND NAT: KOSRAE
 PAC ISLAND NAT: MARSHALL ISLANDS
 ISLANDS
 PAC ISLAND NAT: PALAU
 PAC ISLAND NAT: PONAPE
 PAC ISLAND NAT: YAP
 PATIENT NOT ELSEWHERE CLASSIFIED
 CLASSIFIED
 PEACE CORP VOL,VOL LDR AND EMPL
 EMPL
 PEACE CORPS APPL - PHYSICAL EXAM
 PHYSICAL EXAM
 PERSONS IN MIL CUSTODY
 PROF EDCT/NEWS AND OIL CO/AUT
 CO/AUT
 CARE
 PUNITIVE DISCHG EXC, SENT NOT
 NOT
 EXP
 RED CROSS EMPLOYEE OUTSIDE US
 US
 SERVICE HOME - OTHER THAN MIL
 MIL
 RET
 SOC SEC BENE MCARE/MCAID/SCHIP
 MCARE/MCAID/SCHIP
 STATE DEPT EMPLOYEE - OUTSIDE US
 OUTSIDE US
 STATE DEPT FAM MBR - OUTSIDE US
 OUTSIDE US
 TRANS DEPT EMPLOYEE
 US CIV EMPL AUTH OCC HLTH
 SERVICES
 US CIV EMPL OF CONTRACTOR-PHYS
 PHYS
 EXM
 US CUSTOMS SERVICE AGENT
 USA ACTIVE DUTY ENLISTED

—
 USA ACTIVE DUTY OFFICER
 USA AD RECRUIT
 USA AD RES-30 DAYS OR LESS, NOT
 LESS, NOT
 LOD
 USA AD RES ENLISTED
 USA AD RES OFFICER
 USA APPLICANT/REGISTRANT
 USA DECEASED SPONSOR
 USA FAM MBR AD
 USA FAM MBR DECEASED AD
 USA FAM MBR DECEASED RETIRED
 RETIRED

63 US
 64 OTHER FEDERAL AGENCY/DEPT
 65 OTHER NON-NATO MILITARY
 66 PAC ISLAND NAT: KOSRAE
 67 PAC ISLAND NAT: MARSHALL
 68 PAC ISLAND NAT: PALAU
 69 PAC ISLAND NAT: PONAPE
 70 PAC ISLAND NAT: YAP
 71 PATIENT NOT ELSEWHERE
 72 PEACE CORP VOL,VOL LDR AND
 73 PEACE CORPS APPL -
 74 PERSONS IN MIL CUSTODY
 75 PROF EDCT/NEWS AND OIL
 75 CARE
 76 PUNITIVE DISCHG EXC, SENT
 76 EXP
 77 RED CROSS EMPLOYEE OUTSIDE
 78 SERVICE HOME - OTHER THAN
 78 RET
 79 SOC SEC BENE
 80 STATE DEPT EMPLOYEE -
 81 STATE DEPT FAM MBR -
 82 TRANS DEPT EMPLOYEE
 83 US CIV EMPL AUTH OCC HLTH
 83 SERVICES
 84 US CIV EMPL OF CONTRACTOR-
 84 EXM
 85 US CUSTOMS SERVICE AGENT
 86 USA ACTIVE DUTY ENLISTED

87 USA ACTIVE DUTY OFFICER
 88 USA AD RECRUIT
 89 USA AD RES-30 DAYS OR
 89 LOD
 90 USA AD RES ENLISTED
 91 USA AD RES OFFICER
 92 USA APPLICANT/REGISTRANT
 93 USA DECEASED SPONSOR
 94 USA FAM MBR AD
 95 USA FAM MBR DECEASED AD
 96 USA FAM MBR DECEASED

USA FAM MBR FAD-TRANS ASSIST ACT
 ASSIST ACT
 USA FAM MBR RET
 USA FAM MBR UNREMAR FRM SPOUSE
 SPOUSE
 USA FRM AD-TRANS ASSISTANCE ACT
 ASSISTANCE ACT
 USA FRM MEMBER-MATERNITY CARE
 CARE
 USA NEWBORN OF FRM SERVICE MBR
 MBR
 USA NEWBORN OF SPONSOR'S
 DAUGHTER
 USA NG-30 DAYS OR LESS, NOT LOD
 NOT LOD
 USA NG ENLISTED
 USA NG INACT DUTY TRG - NOT LOD
 NOT LOD
 USA NG INACT DUTY TRG ENL
 USA NG INACT DUTY TRG OFF
 USA NG OFFICER
 USA RES INACT DUTY TRG - NOT LOD
 NOT LOD
 USA RES INACT DUTY TRG ENLISTED
 ENLISTED
 USA RES INACT DUTY TRG OFFICER
 OFFICER
 USA RET LOS ENLISTED
 USA RET LOS OFFICER
 USA RET PDRL ENLISTED
 USA RET PDRL OFFICER
 USA RET TDRL ENLISTED
 USA RET TDRL OFFICER
 USA ROTC
 USA UNREMARIED FRM SPOUSE
 USAF ACADEMY CADET
 USAF ACTIVE DUTY
 USAF AD RECRUIT
 USAF AD RES-30 DAYS OR LESS, NOT
 LESS, NOT
 LOD
 USAF AD RES
 USAF APPLICANT/REGISTRANT
 USAF FAM MBR AD
 USAF FAM MBR DECEASED AD
 USAF FAM MBR DECEASED RETIRED
 RETIRED
 USAF FAM MBR FAD-TRANS ASSIST
 ASSIST
 ACT
 USAF FAM MBR RET
 USAF FAM MBR UNREMAR FRM SPOUSE
 SPOUSE
 USAF FRM AD-TRANS ASSISTANCE ACT
 ASSISTANCE ACT
 USAF FRM MEMBER-MATERNITY CARE
 CARE

97 USA FAM MBR FAD-TRANS
 98 USA FAM MBR RET
 99 USA FAM MBR UNREMAR FRM
 100 USA FRM AD-TRANS
 101 USA FRM MEMBER-MATERNITY
 102 USA NEWBORN OF FRM SERVICE
 103 USA NEWBORN OF SPONSOR'S
 103 DAUGHTER
 104 USA NG-30 DAYS OR LESS,
 105 USA NG ENLISTED
 106 USA NG INACT DUTY TRG -
 107 USA NG INACT DUTY TRG ENL
 108 USA NG INACT DUTY TRG OFF
 109 USA NG OFFICER
 110 USA RES INACT DUTY TRG -
 111 USA RES INACT DUTY TRG
 112 USA RES INACT DUTY TRG
 113 USA RET LOS ENLISTED
 114 USA RET LOS OFFICER
 115 USA RET PDRL ENLISTED
 116 USA RET PDRL OFFICER
 117 USA RET TDRL ENLISTED
 118 USA RET TDRL OFFICER
 119 USA ROTC
 120 USA UNREMARIED FRM SPOUSE
 121 USAF ACADEMY CADET
 122 USAF ACTIVE DUTY
 123 USAF AD RECRUIT
 124 USAF AD RES-30 DAYS OR
 124 LOD
 125 USAF AD RES
 126 USAF APPLICANT/REGISTRANT
 127 USAF FAM MBR AD
 128 USAF FAM MBR DECEASED AD
 129 USAF FAM MBR DECEASED
 130 USAF FAM MBR FAD-TRANS
 130 ACT
 131 USAF FAM MBR RET
 132 USAF FAM MBR UNREMAR FRM
 133 USAF FRM AD-TRANS
 134 USAF FRM MEMBER-MATERNITY

Provider Type 58

USAF NG-30 DAYS OR LESS, NOT LOD
NOT LOD

-

USAF NG
USAF NG INACT DUTY TRG
USAF RES INACT DUTY TRG - NOT
NOT
LOD
USAF RES INACT DUTY TRG
USAF RET LOS ENLISTED
USAF RET LOS OFFICER
USAF RET PDRL ENLISTED
USAF RET PDRL OFFICER
USAF RET TDRL ENLISTED
USAF RET TDRL OFFICER
USAF ROTC
USAF UNREMARRIED FRM SPOUSE
SPOUSE
USCG ACADEMY CADET
USCG ACTIVE DUTY
USCG AD RECRUIT
USCG AD RES
USCG APPLICANT/REGISTRANT
USCG AUXILIARY PERSONNEL
USCG FAM MBR AD
USCG FAM MBR DECEASED AD
USCG FAM MBR DECEASED RETIRED
RETIRED
USCG FAM MBR RET
USCG RES INACT DUTY TRG
USCG RET LOS
USCG RET PDRL
USCG RET TDRL
USCG UNREMARRIED FRM SPOUSE
SPOUSE
USFHP ENROLLEE - EMERGENCY
USMA CADET
USMC ACTIVE DUTY
USMC AD RECRUIT
USMC AD RES-30 DAYS OR LESS, NOT
LESS, NOT
LOD
USMC AD RES
USMC APPLICANT/REGISTRANT
USMC FAM MBR AD
USMC FAM MBR DECEASED AD
USMC FAM MBR DECEASED RETIRED
RETIRED
USMC FAM MBR RET
USMC FRM MEMBER-MATERNITY CARE
CARE
USMC NEWBORN OF SPONSOR'S
DAUGHTER
USMC RES INACT DUTY TRG
USMC RET LOS ENLISTED

135 USAF NG-30 DAYS OR LESS,

136 USAF NG
137 USAF NG INACT DUTY TRG
138 USAF RES INACT DUTY TRG -
138 LOD
139 USAF RES INACT DUTY TRG
140 USAF RET LOS ENLISTED
141 USAF RET LOS OFFICER
142 USAF RET PDRL ENLISTED
143 USAF RET PDRL OFFICER
144 USAF RET TDRL ENLISTED
145 USAF RET TDRL OFFICER
146 USAF ROTC
147 USAF UNREMARRIED FRM
148 USCG ACADEMY CADET
149 USCG ACTIVE DUTY
150 USCG AD RECRUIT
151 USCG AD RES
152 USCG APPLICANT/REGISTRANT
153 USCG AUXILIARY PERSONNEL
154 USCG FAM MBR AD
155 USCG FAM MBR DECEASED AD
156 USCG FAM MBR DECEASED
157 USCG FAM MBR RET
158 USCG RES INACT DUTY TRG
159 USCG RET LOS
160 USCG RET PDRL
161 USCG RET TDRL
162 USCG UNREMARRIED FRM
163 USFHP ENROLLEE - EMERGENCY
164 USMA CADET
165 USMC ACTIVE DUTY
166 USMC AD RECRUIT
167 USMC AD RES-30 DAYS OR
167 LOD
168 USMC AD RES
169 USMC APPLICANT/REGISTRANT
170 USMC FAM MBR AD
171 USMC FAM MBR DECEASED AD
172 USMC FAM MBR DECEASED
173 USMC FAM MBR RET
174 USMC FRM MEMBER-MATERNITY
175 USMC NEWBORN OF SPONSOR'S
175 DAUGHTER
176 USMC RES INACT DUTY TRG
177 USMC RET LOS ENLISTED

USMC RET LOS OFFICER
 USMC RET PDRL ENLISTED
 USMC RET PDRL OFFICER
 USMC RET TDRL ENLISTED
 USMC RET TDRL OFFICER
 USMC UNREMARIED FRM SPOUSE
 SPOUSE
 USN ACADEMY CADET
 USN ACTIVE DUTY

178 USMC RET LOS OFFICER
 179 USMC RET PDRL ENLISTED
 180 USMC RET PDRL OFFICER
 181 USMC RET TDRL ENLISTED
 182 USMC RET TDRL OFFICER
 183 USMC UNREMARIED FRM
 184 USN ACADEMY CADET
 185 USN ACTIVE DUTY

USN AD RECRUIT
 USN AD RES-30 DAYS OR LESS, NOT
 LESS, NOT
 LOD
 USN AD RES
 USN APPLICANT/REGISTRANT
 USN FAM MBR AD
 USN FAM MBR DECEASED AD
 USN FAM MBR DECEASED RETIRED
 RETIRED
 USN FAM MBR FAD-TRANS ASSIST ACT
 ASSIST ACT
 USN FAM MBR RET
 USN FAM MBR UNREMAR FRM SPOUSE
 SPOUSE
 USN FRM AD-TRANS ASSISTANCE ACT
 ASSISTANCE ACT
 USN RES INACT DUTY TRG - NOT LOD
 NOT LOD
 USN RES INACT DUTY TRG
 USN RET LOS ENLISTED
 USN RET LOS OFFICER
 USN RET PDRL ENLISTED
 USN RET PDRL OFFICER
 USN RET TDRL ENLISTED
 USN RET TDRL OFFICER
 USN ROTC
 USN UNREMARIED FRM SPOUSE
 USO PERS AND FAM MBR OUTSIDE US
 OUTSIDE US
 USPHS ACTIVE DUTY
 USPHS AD RES
 USPHS APPLICANT/REGISTRANT
 USPHS FAM MBR AD
 USPHS FAM MBR DECEASED RETIRED
 RETIRED
 USPHS FAM MBR RET
 USPHS RET LOS
 USPHS RET TDRL
 VETERANS ADMIN BENEFICIARY
 VOL DONOR ORGAN/BLOOD NO CHARGE
 CHARGE
 VOL SUBJECT RESEARCH PROJECT
 PROJECT
 WC-CIV, DOD EMPL

186 USN AD RECRUIT
 187 USN AD RES-30 DAYS OR
 187 LOD
 188 USN AD RES
 189 USN APPLICANT/REGISTRANT
 190 USN FAM MBR AD
 191 USN FAM MBR DECEASED AD
 192 USN FAM MBR DECEASED
 193 USN FAM MBR FAD-TRANS
 194 USN FAM MBR RET
 195 USN FAM MBR UNREMAR FRM
 196 USN FRM AD-TRANS
 197 USN RES INACT DUTY TRG -
 198 USN RES INACT DUTY TRG
 199 USN RET LOS ENLISTED
 200 USN RET LOS OFFICER
 201 USN RET PDRL ENLISTED
 202 USN RET PDRL OFFICER
 203 USN RET TDRL ENLISTED
 204 USN RET TDRL OFFICER
 205 USN ROTC
 206 USN UNREMARIED FRM SPOUSE
 207 USO PERS AND FAM MBR
 208 USPHS ACTIVE DUTY
 209 USPHS AD RES
 210 USPHS APPLICANT/REGISTRANT
 211 USPHS FAM MBR AD
 212 USPHS FAM MBR DECEASED
 213 USPHS FAM MBR RET
 214 USPHS RET LOS
 215 USPHS RET TDRL
 216 VETERANS ADMIN BENEFICIARY
 217 VOL DONOR ORGAN/BLOOD NO
 218 VOL SUBJECT RESEARCH
 219 WC-CIV, DOD EMPL

Provider Type 60

WC-CIV, FED EMPL
WC-DOD BENE, DOD EMPL
WC-DOD BENE, FED EMPL
WC-DOD BENE, NON-FED EMPL
WELFARE WRKR/VOL/STUDENT NURSE
NURSE
YTH GRP EMRG-MIL SPON-DOD INSTL
INSTL

220 WC-CIV, FED EMPL
221 WC-DOD BENE, DOD EMPL
222 WC-DOD BENE, FED EMPL
223 WC-DOD BENE, NON-FED EMPL
224 WELFARE WRKR/VOL/STUDENT
225 YTH GRP EMRG-MIL SPON-DOD



Appendix G

SPSS Output

Descriptive Statistics

	Mean	Std. Deviation	N
Qust_compsat Q7			
Overall Sat w/Prvdr	4.54	.986	104013
Age_17andBelow	.16	.362	104013
Age_18to24	.13	.337	104013
Age_25to34	.17	.376	104013
Age_35to44	.19	.393	104013
Age_65orMore	.09	.286	104013
Cat_OTH	.27	.442	104013
Cat_RET	.13	.340	104013
Cat_FM	.32	.467	104013
Hosp	.32	.468	104013
MedCen	.16	.370	104013
NP	.23	.421	104013
PA	.29	.454	104013
Patient_Gender	.52	.500	104013
Qust_MPCM	.29	.452	104013
Rnk_O1	.02	.134	104013
Rnk_O2	.03	.163	104013
Rnk_O3	.17	.374	104013
Rnk_O4	.14	.344	104013
Rnk_O5	.04	.190	104013
Rnk_O6	.01	.103	104013
Rnk_UKN	.00	.038	104013

[illegible]

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Rnk_UKN, Age_ 35to44, Rnk_O6, Rnk_O5, Cat_FM, Qust_ MPCM, MedCen, Rnk_O4, Rnk_O1, Rnk_O2, Age_ 18to24, NP, Rnk_ O3, Hosp, Age_ 65orMore, Patient_ Gender, Age_ 25to34, PA, Cat_RET, Age_ 17and Below, Cat_OTH ^a		Enter

a. All requested variables entered.

b. Dependent Variable: Qust_compsat
Q7 Overall Sat w/Prvdr

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.171 ^a	.029	.029	.972	.029	149.814	21	103991	.000

a. Predictors: (Constant), Rnk_UKN, Age_35to44, Rnk_O6, Rnk_O5, Cat_FM, Qust_MPCM, MedCen, Rnk_O4, Rnk_O1, Rnk_O2, Age_18to24, NP, Rnk_O3, Hosp, Age_65orMore, Patient_Gender, Age_25to34, PA, Cat_RET, Age_17andBelow, Cat_OTH

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2971.944	21	141.521	149.814	.000 ^a
	Residual	98234.422	103991	.945		
	Total	101206.37	104012			

a. Predictors: (Constant), Rnk_UKN, Age_35to44, Rnk_O6, Rnk_O5, Cat_FM, Qust_MPCM, MedCen, Rnk_O4, Rnk_O1, Rnk_O2, Age_18to24, NP, Rnk_O3, Hosp, Age_65orMore, Patient_Gender, Age_25to34, PA, Cat_RET, Age_17andBelow, Cat_OTH

b. Dependent Variable: Qust_compsat Q7 Overall Sat w/Prvdr

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Correlations		
		B	Std. Error	Beta				Zero-order	Partial	Part
1	(Constant)	4.496	.012			387.921	.000			
	Age_17andBelow	-.077	.012	-.028		-6.208	.000	.006	-.019	-.019
	Age_18to24	-.269	.012	-.092		-23.282	.000	-.085	-.072	-.071
	Age_25to34	-.218	.011	-.083		-19.609	.000	-.073	-.061	-.060
	Age_35to44	-.097	.010	-.039		-9.463	.000	-.013	-.029	-.029
	Age_65orMore	.139	.012	.040		11.630	.000	.092	.036	.036
	Cat_OTH	.094	.010	.042		9.215	.000	.054	.029	.028
	Cat_RET	.112	.013	.039		8.657	.000	.078	.027	.026
	Cat_FM	.057	.010	.027		5.479	.000	-.025	.017	.017
	Hosp	.019	.007	.009		2.684	.007	.020	.008	.008
	MedCen	-.002	.009	-.001		-.237	.813	.029	-.001	-.001
	NP	.093	.008	.040		11.891	.000	.051	.037	.036
	PA	-.014	.008	-.006		-1.743	.081	-.058	-.005	-.005
	Patient_Gender	-.015	.008	-.008		-1.926	.054	.003	-.006	-.006
	Qust_MPCM	.093	.007	.043		13.230	.000	.070	.041	.040
	Rnk_O1	.122	.023	.017		5.239	.000	-.012	.016	.016
	Rnk_O2	.135	.019	.022		6.941	.000	-.007	.022	.021
	Rnk_O3	.067	.008	.026		7.958	.000	.003	.025	.024
	Rnk_O4	.099	.009	.035		10.626	.000	.032	.033	.032
	Rnk_O5	.083	.016	.016		5.136	.000	.015	.016	.016
	Rnk_O6	.160	.030	.017		5.421	.000	.019	.017	.017
	Rnk_UKN	-.074	.080	-.003		-.922	.357	-.002	-.003	-.003

a. Dependent Variable: Qust_compsat Q7 Overall Sat w/Prvdr

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